that it can be highly manured and easily irrigated, and for this reason homestead land is generally selected. The cultivation requires much attention throughout the growth of the plant. From the commencement of the rains in June until October the ground is prepared by repeated ploughings, weedings and manuring, and the seed is sown in November. Several waterings and weedings are ordinarily necessary before the plant reaches maturity in February. After the plant has flowered, the first process is to remove the petals, which are preserved, to be used afterwards as coverings for the opium cakes. The opium is then collected during the months of February to March, by lancing the capsules in the afternoon with an iron instrument and scraping off the exudation the next morning. In the beginning of April the cultivators bring in their opium to the weighment centres of the different Sub-Agencies, where it is examined and weighed, and the balance due according to the Opium Officer's valuation is paid to them. Final adjustments are made in August after the value of the drug has been ascertained by assay at the Patna Factory, where the final process of preparing the drug in balls or cakes is conducted.

There is a tendency for the cultivation of poppy to decrease, as year by year it is becoming less profitable to the ryots. The plant is delicate; a thoroughly favourable year comes only at uncertain intervals; and the cultivators have had to contend with a number of bad seasons. There is accordingly a marked tendency to withdraw from an industry so precarious, and to substitute the more robust cereals or such paying crops as sugarcane, potatoes, chillies and vegetables. This movement has been quickened by the fact that the value of cereals has increased of recent years, while the price paid for the crude drug remains stationary.

Indigo.

Indigo is most widely grown in Samāstipur, but was until recently very generally cultivated in all parts of the district. Its cultivation has been practically abandoned in the three northern thānas of Madhubanī, and within the last few years the area under the plant has shrunk enormously. It is the most valuable of all the non-food crops, but as it plays such an important part in the rural economy of the district, an account of its cultivation must be deferred to Chapter IX.

Sugarcane.

The most important crop after indigo is sugarcane. It has long been grown in the Madhubanī subdivision and in Baherā thāna, but its cultivation has been extended of recent years owing to the decline of indigo. In earlier days the cultivation of sugarcane was very considerable, and many of the indigo concerns were originally started as sugar factories, the manufacture of sugar being given up when indigo proved to be more profitable. The reverse process is now taking place, as indigo is in many places being replaced by sugarcane. In the recent settlement operation it was found that the area under sugarcane was 16,300 acres or 0·96 per cent. of the net cropped area, but it has now increased to 17,000 acres. Sugarcane is one of the profitable crops grown in the district in spite of the labour and expense its cultivation requires. It is a crop which not only exhausts the soil, but occupies the ground for a long period, extending over a year. It is planted during February or March, in cuttings of about a foot in length placed in rows about 2 feet apart. When the plant begins to sprout, it is well watered and the surrounding earth is loosened. Each plant grows into a cluster of canes, which are generally ready for cutting in January or February. The crop requires great care, and must have 7 or 8 waterings, even if the other crops have to do without water in consequence.

As the price of sugar fluctuates considerably, its cultivation is always somewhat of a speculation. One attraction, however, to the ryot is that he can generally get an advance from the person for whom he grows the crop, and this factor almost invariably causes an extension of sugarcane cultivation in a year of drought, when other crops have failed and the cultivators are pressed for ready money.

Other crops.

The only other non-food crops which requires special mention are fibres and the thatching grass called *kharaul*. The latter grows wild, if left undisturbed, and, like sugarcane, shelters herds of wild pig; when green, it affords fodder to the cattle, and when dry, it is used for thatching. If only cattle are prevented from trespassing, it is as profitable as many of the food crops. The area under fibres is insignificant, and is mostly accounted for by cotton cultivation in the Samâstipur subdivision. Experiments with tree cotton have recently been started at Meniârpur, and with rhea at Pandaul and at Dalsingh Sarai, 500 acres having been planted out at the latter place.

FRUITS AND VEGETABLES.

One of the most remarkable features of the district is its numerous and extensive mango groves. They are to be found in almost every village, and altogether cover 85,000 acres or 4 per cent. of the area under cultivation. The trees generally are well grown and of uniform size, being planted with great regard for symmetry, in straight equidistant lines. The *lichi* (*Nephelium litchi*) gardens are justly famous for the delicious fruit they bear; peaches and limes flourish, and among other fruits grown with success may be mentioned the *papaya*, plantain, guava, custard-apple, jack-fruit and *bel*.

Among vegetables, potatoes, yams (*aluā*) and *suthni* are very common, especially in the Samāstipur subdivision, where they occupy a large area. A great number of other vegetables are raised in garden plots for household use, and also on a larger scale in the neighbourhood of towns, such as the egg plant or *baigun* (*Solanum melongena*), ground-nut (*Trichosanthes dioica*), pumpkins, gourds, radishes, melons, onions and carrots. The favourite condiment is the chilli, which is cultivated extensively.

EXTENSION OF CULTIVATION.

A century ago a great part of Darbhangā was uncultivated partly owing to the desolation caused by the terrible famine of 1770, and partly because of the oppression of the farmers of revenue and the depredations of freebooting zamīndārs. So terribly did the former affect the people that in 1783 the Collector of Tirhut submitted a proposal that cultivators should be attracted from the dominions of the Vizier of Oudh to reclaim the unpeopled wastes of his district; and in 1781 the Judge reported that, owing to the tyranny of the local revenue officer and his subordinates, there was but very little cultivation for 20 miles from Darbhangā and that grass jungles appeared over extensive plains which before were rich in culture. In 1796 *pargana* Pachhi was described as the abode of dreadful beasts of prey, while the adjoining *pargana* of Alāpur, now one of the richest parts of the district, was the haunt of wild elephants, whose depredations prevented all improvement. *Pargana* Bharwāra, which comprises a considerable portion of the head-quarters subdivision, where 78 per cent. of the land is now under cultivation, contained large stretches of waste land; and in 1802 it was reported that for miles nothing could be seen but uncultivated plains with here and there a few *bighas* under the plough. When law and order were finally established, agriculture was extended to a remarkable degree, and with what rapidity this happened can be gathered from a report submitted by the Collector in 1824. "In Tirhut proper," he wrote, "the waste land at the time of the Settlement, it is believed, considerably exceeded that under cultivation, and in some extensive parganas adjoining the Nepal Terai and those between the Teljuga and the Daosi rivers in the north-eastern part of the district the cultivated land was to the waste, perhaps, as one to fifty. All these parganas are now considerably advanced in cultivation. Since the decennial settlement cultivation has been improved and extended, and the population has increased in Tirhut in a manner that excites the wonder of those who do not reflect that such was the inevitable result of that measure."

In the early part of the 19th century then a very large proportion of the district, amounting probably to half the total area, and in the north certainly to more than half, was uncultivated. By 1840 the cultivated area had increased to three-fifths of the total, but in the north it was still little more than half. During the next ten years, the cultivated area appears to have increased rapidly, until in 1850 it amounted probably to nearly three-fourths of the total. In 1875 it was estimated to be 79 per cent. of the total; and the recent survey and settlement operations have shewn that it is now just under 80 per cent. of the total area of the district. We should probably therefore be justified in concluding that cultivation has nearly doubled itself within the last hundred years, but that the greater part of the increase took place in the first half of last century.

The largest uncultivated area is in the head-quarters subdivision; where there is a considerable amount of swamp and marsh, which is under water for the greater part of the year. It is nearly as great in the Madhubanī subdivision, where there is much culturable jungle along the banks of streams and on the Nepāl frontier; and it amounts to 23 per cent. of the total area in the Madhubanī thāna, where it is due to the large number of mango groves which stud the country; this tract is the stronghold of Brahmanism in Darbhangā, and many of the groves have been planted from religious motives. It is least (17 per cent.) in the Samāstipur subdivision, where there is less room for the extension of cultivation than in any other part of the district. It may appear somewhat remarkable that Samāstipur under these circumstances shows a higher proportion of current fallow than Madhubanī, but the reason is that the agricultural conditions of the two subdivisions are radically different. Samāstipur, as a whole, is marked by the careful cultivation of its rich uplands. Such lands require occasional rest, and the cultivators are intelligent enough to understand the advantage of allowing it to them. But in Madhubanī the lands are mainly low and produce but one crop in the year, and so the necessity for high cultivation does not arise. In a year of good rainfall no one would think of leaving rice lands fallow, and, indeed, rice lands positively deteriorate when left uncultivated, as they become baked and hardened, the *ails* or partitions between the fields become broken, and the drains by which the land was irrigated get filled up or obliterated.

The uncultivated area is one-fifth of the total area of the district; but about half of this is composed of roads, rivers, tanks, house-sites, etc., and is therefore not available for cultivation. Of the area still available for cultivation about half is waste land, pure and simple; and much of it, being impregnated with the salt efflorescence known as *reh,* is unfit for cultivation in its present state. But in a district such as Darbhangā, where the cattle mainly depend upon grazing, it would probably be impossible to reduce the area of waste land to any appreciable extent; for if the area still culturable were to be cultivated, there would be nothing left for the cattle to graze. There is thus but little room for the further extension of cultivation; the district is already densely populated; and there appear to be good grounds for the belief that it will at no distant date reach a point when it will no longer be able to support an increase in its population from the produce of the soil, without either a reduction in the standard of comfort or an increase in productive capacity.

IMPROVED METHODS OF CULTIVATION.

So far there appears to be no indication of any general improvement in the methods of cultivation. The implements are the same as have been used for generations past, except in the lands worked by European capital, and no new or improved implements have been adopted, with the exception of the iron roller sugar-pressing machines invented in 1874 by the proprietors of the Bihiā estate in Shāhābād, and hence known as the Bihiā miles. No greater progress is noticeable in the use of manures, except where indigo is grown and European enterprise has developed the land. Manuring is, indeed, little resorted to, when it involves any extra expenditure, except for special crops like potatoes, sugarcane, tobacco, and poppy, and then only to a limited extent.

CATTLE.

Tirhut has always had a high reputation for its cattle, and the East India Company used to obtain draught bullocks from it for the Ordnance Department. The best strain in the district is the Bachaur, so called from the northern *pargana* in which the breed is common. Further south, floods militate against success in breeding, and though there is never an absolute lack of food, the want of good pasturage is a serious drawback. There are large grazing grounds in the north, but in the south, where nearly all the land is under cultivation, the cattle have to be content with such scanty herbage as the road-sides, tank-banks and boundary ridges afford, and are partly stall-fed on chopped straw. The grazing ground necessary for the maintenance of a sufficient agricultural stock has, indeed, probably been reduced to the lowest possible limits.

The Madhubanī subdivision is well stocked with cattle, and the Khajaulī and Phulparās thānas contain a large number of milch kine, draught cattle and agricultural stock of all kinds. These two thānas contain the Jabdi and Bachaur *parganas,* which are noted for their breed of cattle. The head-quarters subdivision and the Wârisnagar thâna are the worst stocked of all. The whole of this area is liable to inundation, from which the cattle always suffer most severely; and in addition, a large part of Baherâ and Roserâ are badly off for roads, and but few carts are kept there. Samâstipur and Dalsingh Sarai are wonderfully, well-stocked, considering the small proportion of waste land which they contain, but the high cultivation practised in this area no doubt necessitates the maintenance of a considerable stock.

Buffaloes are reared in considerable numbers, and the district has long been noted for its breed, good males fetching a high price and being largely exported to Bengal. They are chiefly valuable for the milk they yield in large quantities; the soil being lighter than in the South Bihâr districts, they are rarely used for ploughing in this part of the country. Sheep are mostly found in the south of the district, but their number is inconsiderable. Goats are bred in most villages, and are especially numerous in localities in which Muhammadans form a large proportion of the population. They are most common in the Wârisnagar and Samâstipur thânas, owing to the number of Muhammadan villages in the neighbourhood of Samâstipur town. Pigs of the ordinary omnivorous kind are kept by the low castes. The only horses in general use are the usual indigenous ponies; they are generally undersized and incapable of much heavy work; but they are very hardy, and those used for *ekkâs* often have astonishing endurance and a great turn of speed.

Veterinary institutions.

The diseases most prevalent among the cattle are rinder pest and foot-and-mouth disease; in 1903-04 over 2,750 cases of the latter disease were treated by itinerant Veterinary Assistants in the villages in the interior. Veterinary aid is also afforded at the Veterinary Dispensary at Laheriâ Sarai. The people are beginning to appreciate the usefulness of this institution; and in 1905-06, 60 horses and ponies and 40 cattle were treated as in-patients, while the number of out-patients was 300 and 600 respectively.

CHAPTER VI

NATURAL CALAMITIES.

FLOODS. AN account of the river system of Darbhangā has been given in Chapter I, from which it will be seen that the district is intersected by numerous streams and rivers, many of which rise in the Nepāl hills and are subject to violent floods. To the north the Kamlā runs due south from the hills, being joined on the way by numerous tributaries, and pursues a southerly course as far as the town of Darbhangā; it then turns off to the south-east, and eventually falls into the Ganges. Further south the district is traversed by the Bāghmati, which rising near Kātmāndu, pierces the Nepāl hills before it reaches British territory. It receives many tributaries in the Nepāl *Tarai*, and after forming the boundary between the Muzaffarpur and Champāran districts, deflects abruptly to the south-east through Muzaffarpur and Darbhangā, until it joins the Tiljūgā at Tilakeswar in the south-east corner of the district. The Little Gandak rises in the lower range of the Nepāl hills near Sumeswar, and receives on its left bank numerous tributaries before entering North Bihār. It pursues an easterly direction through Darbhangā almost parallel with the Bāghmati, and, after traversing the southern part of the district, falls into the Ganges just below the town of Monghyr.

In this portion of their course the beds of the rivers, raised by the silt they bring down, are elevated above the level of the surrounding country; and it will thus be understood that sudden heavy rain over the northern portion of Tirhut, the Nepāl *tarai* and the range of hills to the north of it, some 150 miles in length, may easily cause these narrow drainage channels to overflow their banks. When this happens, an inundation inevitably follows, and the lower down one goes, the more is the evil aggravated, not only by the converging of the streams towards the same point, but also by the network of private *bāndhs* or embankments that have been made year after year for the protection of the villages along their banks: for in the first place they make matters worse for the villages lower down stream, and in the end, when the floods have asserted themselves, and spread over the country, they hedge them in and delay their subsidence. Owing to this combination of circumstances, the district has always been subject to severe and widespread inundations, which cause a good deal of temporary suffering. But, as a rule, the distress they cause soon passes away; the dwellings which are destroyed are quickly replaced, as the cost of erecting such mud-walled huts is small; and the cultivators are compensated, in large measure, for the losses they sustain by the fertilizing silt left by the receding waters, which increases the productiveness of the soil and ensures rich crops. The following account of the greatest of the floods which have occurred in recent years will sufficiently show how short-lived are their injurious effects, except in years of extraordinary floods such as 1906.

Floods of 1893.

In 1893 there were three distinct floods, one after the other, answering to the heavy falls of rain in July, again in August, and lastly in September. The first did no particular damage, but the two others came down upon a country already water-logged, causing an immense amount of injury to crops, houses, roads, and to the railway line between Samāstipur and Sītāmarhi. Most of the *bhadoi* over the flooded tracts was lost, the portion saved being greatly injured; the rice plants were swept away not only once but twice, and in some places three times in succession, where the people had been able during the intervals to procure new seedlings and to replant them. In Champāran and Muzaffarpur the floods from the Bāghmati and Little Gandak were confined, roughly speaking, to the country lying to the north of the Bengal and North-Western Railway line. But in Darbhangā matters were aggravated by the water from the Kamlā, at its highest known flood, heading the flow from the other districts. The combined floods swept the district from north-west to south-east at a level some 3 feet higher than had ever been known before. One-half of the district was for the time a slowly moving inland sea, the inhabitants with their cattle camping out along the high-level roads, the railway embankments, and here and there on a piece of *dih* land standing out of the water like an island. Fortunately, the waters rose gradually; no lives, so far as could be ascertained, were lost; and the people had time to save their stores of grain and to drive off most of their cattle. Still numbers of these perished both during the floods and subsequently from want of proper nutriment.

Altogether 2,000 square miles were submerged, the parts most affected being the centre and south of the head-quarters subdivision, the western portions of the Madhubanī subdivision, and the northern and south-eastern parts of the Samāstipur subdivision. The southern half of the town of Darbhangā itself was for some days under water, and between 1,400 and 1,500 houses collapsed. Great damage was done to the railway line, roads and bridges, traffic on the Darbhangā-Sītāmarhi section of the railway being interrupted for nearly three weeks. The way in which the people recovered from their losses, instead of being overwhelmed by them, was very remarkable. At first, it seemed almost certain that the affected tracts would be the scene of famine relief on an extensive scale: but as time went on, and the floods subsided, the people returned to their villages, rebuilt their houses, and proceeded to till their lands for the *rabi* sowings. Provision was made for distributing advances under the Agriculturists Loans Act; but, in the end, only a comparatively small sum was needed for the purpose. In February 1894 test relief works were opened in the south-east of the district, but they were attended by only 700 or 800 persons, and they were soon closed, as even this small number soon dwindled down. The reason for this appears to be that there were excellent harvests in the unflooded parts of the country, where there was a plentiful demand for labour, and prices were low; and that in the flooded parts the people expected an abundant *rabi* harvest after the enrichment of the lands by the silt deposit, and the *mahājans* were consequently willing to loosen their purse-strings.

Flood of 1898.

In September 1898 the district was again visited by flood, and an area of 800 square miles was inundated. In the Madhubanī subdivision the floods affected only the western portion comprised in the Benīpatī thāna, where they were caused by the rising of the Little Bāghmati. In the head-quarters subdivision the tracts of country along the Kamlā, Bāghmati, Little Gandak and Karai suffered considerably, but in the interior little damage was done, except to the low lands. The civil station of Laheriā Sarai and the town of Darbhangā, lying between the Kamlā and Bāghmati, were flooded in parts by the rise of both rivers, and about 800 houses collapsed; but the land on which the Government buildings stand was not submerged, owing to the protection afforded by sluice gates erected some time previously. In the Samāstipur subdivision the parts most seriously affected were the eastern portion of the Wārisnagar thāna along the Bāghmati and the south-western part of the Dalsingh Sarai thāna, which was flooded by the overflow of the Tāl Barailā, a large lake in the Muzaffarpur district. Fortunately, the floods came after the middle of September, when a considerable portion of the *bhadoi* crop had already been harvested; and, in spite of the loss caused by the floods, an average crop was secured. The winter rice crop in some places was entirely ruined, and altogether about half of it was damaged. The mud-walled huts of the villagers collapsed in great numbers, and over 38,000 were destroyed. Very few cattle were lost, but 164 persons were drowned, the loss of life being greatest in the Wārisnagar thāna, where the Bāghmati came down in flood with great suddenness, accompanied by a violent cyclone. On the other hand, the floods greatly increased the fertility of the soil, and ensured a magnificent *rabi* crop. Labour was abundantly provided for on the construction of the railway line to Katihār, which was close to the tracts most severely affected; and not a single application was made for Government loans. Prices did not rise, and the Collector reported that, taking the district as a whole, the flood was rather beneficial than otherwise.

Flood of 1902.

Another great inundation was that of August 1902, which was caused by excessive rain in the Nepāl hills. To the north-west, in the Benīpatī thāna, the Jamunā and Bilautī poured down their flood waters through the Dhaus river, and further east, in the Madhubanī thāna, the floods came down through the Jaynagar Kamlā, the Mirzāpur Kamlā, the Balān and Tiljūgā. The *bhadoi* crop was partially destroyed, the roads were extensively breached, and parts of the town of Madhubanī were submerged. To the north-east of Madhubanī the floods came down through the Balān and Bihula, joining the Khurg and Panchi channels; and in this tract the rice crop was seriously damaged. The flood was greatest in the Madhubanī subdivision, but further south, the Little Bāghmati breached the embankment which protects Darbhangā, and flowed into the southern and western parts of the town. Some injury was done to the crops in the headquarters subdivision, and also in some villages on the banks of the Little Gandak in the Samāstipur subdivision; but in this part of the district, the floods caused comparatively little damage, as they had already spent their force in the northern tracts. Even there, however, there was but little loss of life, 17 persons only being drowned. In some of the frontier villages many houses were damaged or swept away altogether, and there was considerable loss of cattle; but elsewhere the news of the flood spread very fast, and the villagers saved their cattle by pegging them out on the banks of tanks and on the roads. Considerable injury was done to the roads; and a bumper *bhadoi* crop was converted into a crop estimated at 78 per cent. in the tracts not flooded to less than half a crop in the flooded tracts. As, however, the flood occurred early in the season, the winter rice did not suffer much, as it was possible to transplant much of it, and the plentiful moisture enabled the cultivators to do so over a larger area than usual. In spite of the losses they sustained, the cultivators in the north welcomed the floods. In the preceding year the rainfall had been deficient, and the winter rice crop had nearly failed in some parts. Here the floods were of comparatively short duration, but they sufficed to replenish the empty tanks and wells, and left a thick deposit of silt, which was invaluable for the *rabi* crop and ensured a full winter rice harvest, where seedlings were available. Consequently, though the people complained of the embankments and of the passage of the flood, no complaints were made about the occurrence of the flood itself.

Floods of 1906.

It has hitherto been a common belief that in Darbhangā famine is never caused by flood, but this belief has been rudely shaken by the course of events during the present year (1906), when the district was swept by the most disastrous floods of which there is any record, and the suffering of the people culminated in famine. In the middle of July the river Kamlā rose in flood, causing considerable damage to the maize and *marud* crops, and also destroying the paddy seedlings in the headquarters subdivision; but the flood subsided after doing a comparatively small amount of damage. It was followed, however, by an inundation of unprecedented height and duration in August. This flood began to rise on the 6th August coming from two directions, the Kamlā and the northern or Little Bāghmati on the north-west, and the true Bāghmati and Little Gandak on the west. It rose steadily till the 24th August or for a period of 16 days, and during this time the greater part of the district was submerged. The whole town of Darbhangā and Laheriā Sarai was under water, the only places that escaped being the *kachahri* premises in Laheriā Sarai and the Bara Bazar in Darbhangā. Here the flood rose so suddenly and the rush of water was so great that thousands were rendered homeless within a few hours, and shelter had to be given to them in the *kachahri* compound. In the interior the distress was far greater. The mud-walled huts soon crumbled away, and for some days the homeless villagers had to camp out on any high land that stood above the waste of water, before they could move on to take shelter in the towns or the few villages that had escaped. The roads were broken in all directions, many parts were inaccessible for want of boats, the railway lines were breached in several places, and the bridges near Hayā Ghāt and Kishanpur being washed away, traffic was stopped for a month. The water in the town of Darbhangā began to recede after about a week, and had disappeared in about 2 weeks' time; but in the interior it took about 2 months for it to clear off, and in the meantime incalculable damage was done to the crops. The *bhadoi* crop was almost entirely destroyed in the head-quarters subdivision, and the damage done to it in the Madhubanī subdivision and the Wārisnagar thāna of the Samāstipur subdivision was scarcely less serious. The *aghani* crop, on the success of which the people are dependent for their year's supply of food, was practically swept away in three-quarters of the Darbhangā subdivision, and was nearly all destroyed in the Wārisnagar and Dalsingh Sarai thānas. In the north of the district, where the floods subsided early and seedlings were available, the cultivators were able to retransplant; but in the greater part of the head-quarters and Samāstipur subdivisions the lateness of the flood made this impossible.

The loss of the crops followed on a year of bad harvests, for in 1905-06 the *bhadoi* crop yielded only 40, and the *aghani* crop 67 per cent. of a normal crop; and the distress which ensued was aggravated by the high price of food grains. During the month of September the trade with adjoining districts was almost at a standstill owing to breaches on the railway line, and internal trade was paralyzed by breaches on the road. Prices had been gradually rising during the year, and were already very high; but the damage to the crops and the interruption in the communications into and through the district sent them up with a bound, until they reached even a higher level than in the famine of 1896-97. The price of rice rose to 5 seers a rupee, and could not be obtained at all in many places, while the quantity of maize available was unusually small, only a few maunds being for sale even in the town of Darbhangā. The result of this combination of circumstances was to plunge a considerable proportion of the population into destitution, and there can be little doubt that had it not been for the promptness of the local officers and planters in starting kitchens for the distribution of food among the homeless and infirm, many deaths from starvation must have been occurred. Famine has been declared in the Ruserā and Baherā thānas, and relief operations have been started. The number receiving gratuitous relief was 45,500 in the beginning of October, 19,000 at the end of November, and 15,800 at the end of December; while the number of those attending test relief works has risen from 1,900 to 14,500 and 32,400 in the same period. Government has advanced 4 lakhs for distribution as agricultural loans, and this large sum has already been expended; while the

Mahârâjâ of Darbhangâ, who has undertaken the task of granting relief on his own estates, has set aside 5 lakhs to provide for loans and gratuitous relief. Nearly two-thirds of the entire district with a population of 1,883,000 is affected, the area being 2,079 square miles, of which 1,069 square miles are in the head-quarters, 590 in the Madhubanī and 420 in the Samāstipur subdivision; and it is estimated that famine will continue until April, though it is considered unlikely that more than 1 per cent. of the population will require relief on relief works.

FAMINES. Early famines.

In the early years of British administration, hardly a year passed without the record of some natural calamity; in one year it was drought, in the next inundation, and in either case the people were hard put to it to withstand distress. The earliest famine of which we possess any detailed record is that of 1769-70, when one-third of the population of Bengal is said to have perished, and Darbhangâ suffered like the other districts of Bihâr. A serious drought followed in 1783, and advances had to be made for the relief of the cultivators, though the scarcity did not culminate in actual famine. The years 1787 and 1788 were no more propitious, as the country was inundated, the cattle died in large numbers, and the crops failed. Drought again caused scarcity in 1791, when all persons, except grain dealers, were arbitrarily prohibited from keeping by them more than one year's supply of grain. There was another drought in 1804; in 1806 the *bhadoi* crop was entirely destroyed by floods, and the *aghani* was threatened; and in 1809 there was considerable suffering owing to the failure of all the principal crops.

Famine of 1866.

Though great distress was caused by these failures of the crops, they did not culminate in actual famine; and the first great famine of the 19th century was that of 1866. In the north of Tirhut, the rice crops had failed partially in 1863, and even more so in 1864. In October 1865, with the prospect of an even more complete failure on the Nepâl frontier, and a deficiency of the rice crops in Madhubanī and the north of the present head-quarters subdivision, the prices of rice and Indian corn rose to three times the ordinary rate, and cases of suicide from starvation and of deaths from want of food began to be reported. The harvesting of the rice crop, however, temporarily supplied both food and wages, and prices at the end of 1865, and in the beginning of 1866, were somewhat easier. In February, prices again began to rise; the usual grain supply from Nepâl ceased; and as there was no demand for labour, the poorer classes suffered extremely, and began to desert their homesteads and migrate southwards in large numbers, while fires and grain-robberies for the purpose of obtaining food became very common. The period from April to June never affords much employment to labourers, and this class, having nothing to fall back on, was reduced to the greatest destitution. No organized system of relief was commenced till June, but eventually relief operations were undertaken at 9 centres, 4 in the Darbhangā and 5 in the Madhubanī subdivision. The suffering was greatest during July, August and September, the price of rice ranging from 7 to 5¼ seers per rupee. In the middle of August cholera broke out, and the people reduced by long privation, fell easy victims to the disease. In September the extreme pressure began to diminish, owing to the good *bhadoi* or autumn crops; and fortunately it never increased again, as the winter rice, in most parts, was a good crop. Still, in some places, famine, disease, and desertion had so debilitated or diminished the population, that half the land remained uncultivated, and relief operations had to be carried on till February 1867.

Famine of 1874.

The next great famine occurred only 8 years afterwards. The year 1873 was the last of a series of three years which were marked by abnormal rainfall and generally unusual weather. The year 1871 was unusually wet; the following year was equally dry; while in 1873 the rainfall was deficient beyond precedent; the rainfall registered at Darbhangā in these three years was 79, 42 and 24 inches respectively. The winter rice crop of 1871 had been seriously injured by inundations, and the consequence was that in 1872 the prices of food-grains were considerably above normal rates, and it was not until the excellent rice harvest of the winter of 1872 that the market recovered its usual tone. The *bhadoi* harvest of 1872, the ensuing rice harvest, and the *rabi* harvest of 1873 were full average crops; and the result was that, although the previous dear year might have pressed on the resources of the people, there was as much grain in the country in the autumn of 1873 as there usually is at that time of the year.

The rains of 1873 commenced late, were insufficient to bring even the *bhadoi* crops to maturity, or to permit of the usual rice area being sown, and ceased in September with a deficiency under the normal fall varying from 11 inches in Tājpur (Samāstipur) to 23 inches in Madhubanī and 28 inches in Darbhangā. The inevitable consequence was the failure of the rice crops in every subdivision, culminating in the almost total destruction of the winter rice crop in Darbhangā, where the rainfall from May to November was only 21 inches. The failure of the *bhadoi* crops varied in different portions of the district, the outturn in Madhubanī and Tājpur being returned as half and in Darbhangā as five-eighths of an average crop. The failure of the winter rice crops was, however, even more complete than this; for in Tājpur only one-fourth, in Madhubanī three-sixteenths, and in Darbhangā one-eighth of an average crop was saved. As regards the *rabi*, the crop was five-eighths or perhaps even three-fourths of an average crop in the Tājpur subdivision, but in the two northern subdivisions the great drought of 1873 made it impossible to sow the lands.

The deficiency in the food supply was supplemented partly by private trade, partly by the grain imported by Government; but the combined efforts of both agencies failed to raise the stocks in the district to a level sufficiently high to obviate the prevalence throughout the year of general tightness in the markets, of prices altogether abnormal, and of continuous pressure on all classes. Private import trade reached its highest degree of development in Tājpur, where relief was consequently least required. On the other hand, trade exhibited but a flickering vitality in Darbhangā, and this only in the south of the subdivision about the mart ofRuserā; and in Madhubanī, it never showed any signs of vitality from first to last. In Madhubanī and Darbhangā, therefore, Government was compelled to put forth its full strength in its most organized form, and there were not wanting anxious days in March and April, when even sanguine men doubted whether the task was not too great for the resources of Government and the devotion of its officers.

The distribution of charitable relief was commenced in the latter month and closed early in October of the same year, the average daily number gratuitously relieved being 124,000, of whom 81,000 were inhabitants of the head-quarters subdivision, 38,000 of the Madhubanī subdivision and 5,000 of Tājpur. The highest daily number for three subdivisions was 134,000 in July in the head-quarters subdivision, 71,600 in August in Madhubanī, and 7,500 in July in Tājpur. Labourers were relieved by wages in grain and cash from January to September 1874, the highest numbers reached being 220,000 in April in the head-quarters subdivision, 369,000 in May in Madhubanī, and 13,300 in June in Tājpur. In April the total number in receipt of this form of relief was 531,500, and in May 569,400, but after those months the number rapidly fell, till it was under 22,000 in September. The relief given by Government in various shapes was on a vast scale, and was estimated to be sufficient for the support for one month of 1,954,732 persons in the head-quarters subdivision, for 2,925,146 in Madhubanī and for 138,638 in Tājpur.

Scarcity of 1876.

Two years afterwards the district had to contend against scarcity owing to the failure of the winter rice crop. This caused some suffering in the north-eastern portion of the district, and the administration of relief had to be commenced in February 1876. Employment was offered, to a small extent, on relief works such as tanks and roads; but the relief was chiefly in the shape of village charity to the weak and sickly, and the expenditure only amounted to Rs. 30,000.

Scarcity of 1889.

Two periods of scarcity then intervened before the great famine of 1897. In 1889 there was some distress in a strip of country along the Nepâl frontier which includes the Khajaulî thâna. In this area the rainfall was much lighter than elsewhere and ceased prematurely, with the result that the winter rice crop, which is the mainstay of the people, was entirely lost, while the *bhadoi* also failed in places, and the *rabi* was sown under unfavourable circumstances. Relief operations were commenced in January 1889, the people being employed on the excavation of tanks and also on the construction of the railway line from Darbhangâ to Sîtâmarhi. The number on relief works gradually rose until the first fortnight of June, when it aggregated 14,656; but after that, abundant rain having fallen, many were induced to return to their ordinary occupations. It rose again to 19,570 at the end of August, but then declined steadily, and the relief works were finally closed in the first week of October. The total expenditure on these works was 2¼ lakhs, of which half was borne by the District Board and half by Government.

Scarcity of 1892.

There was again scarcity in 1892, the great deficiency of the rains of 1891 causing a total failure of the winter rice crop on the high lands and serious injury to the *bhadoi* crops; the outturn of the latter was estimated at not more than 37½ per cent., and that of winter rice was about the same. The affected tracts were the Ruserâ and Baherâ thânas, and a small portion of the Darbhangâ thâna, to the east of Darbhangâ town, in the head-quarters subdivision; and the Benipatî and Khajaulî thânas, the northern half of the Madhubanî thâna, and parts of the Phulparâs thâna in the Madhubanî subdivision. Relief operations were begun in March, and were continued for 19 weeks, the average daily attendance being 19,200. Altogether 67 tanks were dug at a cost of Rs. 94,000, and 994 miles of road were taken in hand, of which 582 miles were completed at a cost of one lakh. The highest daily number of persons relieved (47,450) was reached in the middle of June, but the daily wage was then reduced, and the rain which fell at this time enabled the people to return to their ordinary occupations. This led to a speedy and steady decrease in the number of labourers, which continued until the works were closed at the end of July.

Famine of 1897. The last great famine from which Darbhangā has suffered is that of 1897. The course of events in 1896 strikingly illustrated the principle that the seasonable distribution of the rainfall is of even more importance, within certain limits, than its actual quantity. There was virtually no rain in the cold weather of 1895-96, and as the September rain was not very heavy, while the rainfall in October was practically nil, the water level had sunk very low by May 1896, when there was fairly heavy rain: in May, however, as throughout the season, the rain fell in a few heavy showers which quickly dried up. There was again good rain in the end of June and beginning of July, but then commenced the first long break of about 6 weeks: hardly any rain fell during this period, while there were many cloudless days of burning sunshine. Thus the rain which fell in August found the ground very dry, and the water level little, if at all, higher than in June. Towards the close of August there were a few days of fairly heavy rain, and then another long break, with fine hot days and occasional west winds, till after the middle of September. This rain again fell on a dry and parched up soil, and in most cases it almost disappeared in a few days.

The monsoon rainfall was below the average, but it was not so much the small quantity of the rainfall as its bad distribution and the hot sunny intervals that had so disastrous an effect on the crop. Up to the end of July the deficiency was only 1¼ inch, but then the district suffered from two long periods of drought in August and September, and much damage was thus caused to the rice. In August the rainfall was nearly up to the average, but in September it was 3 inches short, and no rain fell after the middle of that month. The net result was a deficiency of 17 per cent. up to the end of October. The actual deficiency of rainfall was not so great as in some other districts, but it was so peculiarly ill-distributed during the critical months of August, September and October, that the rice on which the district so much depends was a very great failure. The short rain in September and October had a bad effect on the *rabi* crops, but fortunately good showers fell in the cold weather and the *rabi* which did come up was very good in the south, fair in Darbhangā and moderately good in Madhubanī. The *bhadoi* and winter rice, however, were very seriously affected by the short rainfall, not only as regards the outturn, but also as regards the extent of land under cultivation. The result was that though the *rabi*, owing to the winter rains, was as high as 15 annas, the *bhadoi* turned out a 10-anna crop, and the *aghani* was only 5 annas. But as the rice in an ordinary year supplies over more than half of the harvests of the district, it will be obvious that the loss of more than two-thirds of it meant great distress for the people, especially as the rice tracts lie close together, chiefly in one-half of the district, *i.e.*, the northern portion.

Commencing from the south where the Samāstipur subdivision lies, we find along the Ganges and south of the railway line as far as Samāstipur, and thence along the Burh Gandak river, a tract very similar to the southern part of the adjoining subdivision of Hājīpur, possessing a soil of great natural fertility, cultivated by expert and industrious husbandmen, and receiving in this year of drought nearly its normal rainfall: this tract, comprising the Dalsingh Sarai and Samāstipur thānas, was always treated as safe, and required no relief except in a few places. North of this fortunate tract a zone of slightly distressed country stretched across the district, being bounded on the north by the Bāghmati river. North of this stream the whole district was severely affected from the first, except isolated tracts which were exceptionally favoured; of these the most important were a tract to the west of the Tiljūgā river in the south of thāna Phulparās, a tract further north to the east of the same thāna, a strip along the Kamlā river from the northern boundary of the district down to Singiā, and a similar strip along the Karai river from Baherā down to Hirnī. In all these localities, except the last, which is a *rabi* country, the prosperity of the tract was due to irrigation from the rivers; other small isolated areas owed their partial immunity to better local rainfall or to their containing high land and *rabi* crops.

No fears of famine were aroused until the break of the rains became very prolonged in August, when the *bhadoi* began to wither, the seed-beds of rice were drying up, and large tracts of rice land remained unplanted. By the end of September it became clear that nothing but good rain in the *Hathiyā* asterism at the close of that month and the beginning of October could save the rice. These hopes proved delusive; the *Hathiyā* passed away without a drop of rain; and the rice was doomed. A test relief work was accordingly opened at Phulparās at the end of October, but this did not attract labourers and was very soon closed. About the middle of November there were signs that distress was beginning to appear among the poorer classes in the Madhubanī subdivision; and test works were opened at Kamtaul and Jaynagar, and the old test works at Phulparās were reopened. The number of labourers was however very small during this month, as the harvesting of the winter rice gave employment on much more remunerative terms than Government offered; and large number of labourers went into the Nepāl *Tarai* and the north of Bhāgalpur, where the rice crop was very good. By the end of November the signs of distress among the poorest classes had decidedly increased, and by the middle of December 5 works had been opened and the average attendance had risen to 713. From this period there was a very rapid increase, the number of works rising to 83 by the end of January 1897 and reaching the maximum of 199 by the 19th June. They then steadily decreased and had all been closed by the 25th September.

The number of labourers increased to 113,880 by the end of January and was 124,514 on the 24th April. It then fluctuated according as showers fell or not, reaching the maximum in the last week of May, when it rose to 145,116 or 6 per cent. of the population affected. In the 1st week of July there were 112,316 labourers, but after that the number fell week by week to 3,616 during the week ending the 11th September and to 250 during the week ending 25th September, when the works were finally closed. The distribution of gratuitous relief was commenced towards the close of November 1896, and at the end of December the average daily number relieved was 1,447. By this time the organization of circles began to take effect, and the numbers of those relieved by Government increased rapidly and without a break till the first week in March, when they had risen to 59,097. In the meantime, the Darbhangâ Râj had also commenced the distribution of gratuitous relief to its ryots, and the total number of those in receipt of this form of relief reached its maximum of 124,410 on the 21st June. It was still nearly 100,000 in the beginning of August, but after that it fell rapidly, and all gratuitous relief was stopped during the week ending the 25th September. The expenditure on this form of relief came to Rs. 4,10,819, some 25,000 persons on the average being relieved daily for 4 months, besides 86,690 persons who received gifts of money, grain or clothes once for all.

The total famine expenditure from public funds was Rs. 36,77,307, and the daily average number relieved was about 1,700,000, or a little over 6 per cent. of the population. There was very little private relief given, except by the Mahârâjâ of Darbhangâ, who spent Rs. 2,45,500 on relief works and Rs. 1,22,800 on gratuitous relief: the aggregate number of those employed on these relief works from first to last, reckoned in terms of one day, was 2,834,848, and of those gratuitously relieved 2,943,702. The highest number of persons relieved on any one day during the famine was 253,910 or 10·49 per cent. of the population affected; and the total number of persons relieved, in terms of one day, was 40,911,000, a total larger than in any other Bengal district.

The death-rate was unusually low during the greater part of the distress. The only months in which the average of the preceding 5 years was exceeded were March, August and September, in the last two of which there was a great deal of fever: the excess was however largest *in thānas outside the area of greatest distress*, so that the rise in the death-rate can scarcely be attributable to famine. The recovery of the people was rapid, and the end of 1897-98 saw them almost restored to their normal condition.

Scarcity of 1906.

In 1906 Darbhangā again suffered from scarcity, amounting *in some tracts to famine*, owing to the disastrous floods which swept the district. These floods and the acute distress they caused have already been described, and it will suffice to point out that the scarcity is entirely different from that which has visited Darbhangā hitherto in being due not to scanty but to excessive rainfall.

LIABILITY TO FAMINE.

Regarding the liability of the district to famine, the following remarks of the Settlement Officer, Mr. J. H. Kerr, I. C. S., may be quoted:—"It will be generally conceded that all famines in North Bihār, which have been serious enough to require Government relief on a large scale, have been due to the failure of the winter rice crop. There is, it is believed, no instance in which Government has had to undertake relief, save in limited local areas, owing to a failure of the crops of the *bhadoi* or *rabi* harvests, though, in the event of a failure of the winter rice crop, conditions are of course relieved or aggravated according to the nature of the preceding *bhadoi* and the subsequent *rabi* harvest. Thus it is only to be expected that Darbhangā, which has a larger gross area and a larger proportion of its cropped area under winter rice than any other district in North Bihār, should suffer most severely in the case of famine, and as a matter of fact, eight out of the ten thānas in the district, of more than four-fifths of its total area, have been officially declared liable to severe distress in the event of a failure of the winter rice crop. The statistics of the last great famine of 1897 further emphasize the importance of the winter rice crop in Darbhangā. The three districts of Sāran, Darbhangā, and Muzaffarpur are practically on an equality, so far as the pressure of population on the soil and the small area available for extension of cultivation are concerned. But the crop failure of 1896 affected them in different degrees of intensity. Though Sāran has the greatest density of population to the square mile and the highest rent rate, it suffered least severely from famine, owing to the variety of its crops and the practical independence of many parts of it of the winter rice harvest. In Darbhangā, on the other hand, where in two subdivisions winter rice covers over three-fifths of the net cropped area, more than a tenth of the population affected by its failure had to turn to Government for relief during the famine of 1897. There could be no more striking corroboration of the conclusion of the Famine Commission, that 'the devastating famines to which the provinces of India have from time to time been liable are in all cases to be traced directly to the occurrence of seasons of unusual drought, the failure of the customary rainfall leading to the failure of the food-crops on which the population depends.' And it might be added that in Bihār, famine, as distinct from local scarcity, is always due to the failure of the winter rice crop, and varies in its effects upon a given area with the importance of the crops other than the winter rice, on which the cultivators can fall back."

"As a matter of fact, the cultivators of Darbhangā can and do weather more than one season of crop failure without turning to Government for relief. It is a common proverb that it takes three bad years to make a famine. Even in the great famine of 1897, which followed two seasons of bad harvests and was accompanied by a higher range of prices than had been known since the previous famine of 1873-74, the proportion of pure cultivators who had to seek relief at the hands of Government must have been very small. For the total number relieved, when the distress was at its height was only 10 per cent. of the total population affected, or little more than half of those who are classed in the census returns as labourers, and who have either no land at all, or whose holdings are too small to support them from the profits of cultivation in an ordinary year, so that they have to eke out their income by working for others. It speaks well for the staying powers of the district, that a large minority even of the labouring class were able to dispense with Government relief during the last famine."

PROTECTIVE SCHEMES.

Various projects have been put forward with the object of affording protection to the cultivators from the variability of the seasons. One is to establish irrigation works on the Dhaus, a minor river flowing from Nepāl into the north-western corner of the district, a tract which was severely affected in 1897. This scheme is however open to the objection that the Nepalese dam up the river, and that though the ryots might take the water in ordinary years, they would certainly object to paying for it. The supply of water is small, and it is liable to be cut off by the Nepalese, just when it might be wanted. Another and larger project is that of providing irrigation from the Kamlā by a main canal 12½ miles long, with three distributaries, which would command an area of 460 square miles. The cost of the project, which was first proposed in 1877, was estimated at Rs. 10,41,000 and the area likely to be irrigated at 52,500 acres. The Irrigation Commission (1901-03) recommended that a detailed estimate of this scheme should be prepared, and that if the cost per acre was not much greater than was anticipated, or not more than Rs 25 an acre, it should be sanctioned and put in hand as soon as funds could be made available. In doing so, they remarked:—"In view of the severe distress to which the densely populated districts of Northern Bihār are subjected whenever there is a failure of the autumn rains, and of the means of reliable protection that are available, we are unwilling to admit that the cost of protection will exceed its value until the matter has been put to a crucial test. Such a test the construction of the Kamlà project will afford at a moderate cost." Estimates are now being prepared; but the district seems to suffer nearly as much from flood as from drought, and it seems doubtful therefore if irrigation works with permanent head-works will be worth their cost. The project, the cost of which is roughly estimated at 14½ lakhs, will provide for the irrigation in a very dry year of about 30,000 acres of rice and 10,000 acres of *rabi*; but it is probable that in a moderately dry year the area of rice irrigable would be greater, while in an ordinary year there would be little or no demand for water. The country which would be commanded is liable to flood, and there are difficulties in finding a suitable site for permanent head-works; and, besides this, there is a risk of the river changing its course and leaving the head-works high and dry.

Another means of protecting the people from the effects of drought consists of the extension of the system of *pains* or private channels led off from the rivers, which has been instituted with such success by Mr. R. S. King in the Darbhangā Rāj. Regarding this method of protection, the Indian Irrigation Commission remark: "The excellent results show how much can be done, by active and energetic officers of long local experience, to utilize the available water-supply in seasons of drought by temporary and comparatively inexpensive expedients adapted to the exigencies of the moment. We think it almost certain that a great deal could be done at a comparatively small expense, and at a cost that would fall far below the net cost to the State of any ambitious system of permanent works, if in seasons of drought prompt measures could be taken for throwing earthen dams across the principal streams at the earliest possible moment, and for diverting the water through the network of channels already existing."

CHAPTER VII.

RENTS, WAGES AND PRICES.

PRODUCE RENTS.

RENTS in Darbhangā are paid either in cash or in kind, but cash rents are of much greater importance, as they are paid for nearly four-fifths of the occupied area. Of the land held by under-ryots 53 per cent. pays rent in kind, but non-occupancy ryots pay such rents for only 7 per cent. of their land, while settled and occupancy ryots, who form the main body of cultivators in the district, pay them for no more than 8 per cent. of their holdings. As a rule, produce rents are most in favour where the proprietor is a petty resident landlord, who can attend personally to their realization, or where the land is liable to inundation or deterioration and the crop is consequently precarious. The largest area under produce rents is in the Dalsingh Sarai thāna, where petty resident proprietors predominate, the proportion being as high as 12 per cent. of the total ryoti area. After Dalsingh Sarai come the Darbhangā and Baherā thānas, with 10 per cent. paying produce rents; in these two tracts there are a large number of small resident landlords, and as much of the land is liable to inundation, the ryots in some villages prefer to pay a rent varying with the outturn rather than a fixed cash rent. In all the other thānas of the district, the area paying produce rents is below the district average, except in Madhubanī, where the peculiar conditions prevailing in the Madhubanī Bābus' estates raise the proportion to 10 per cent. These landlords maintain a very large establishment of Brāhman priests and other dependants, and have always found it convenient to realize a considerable share of their rents in kind.

The *batāi* system.

Produce rents are of three kinds, *batāi*, *bhāoli* and *mankhap*. Under the *batāi* system, the actual crop is divided between the landlord and the ryot, either in the field or on the threshing-floor. The proportion is usually half and half, but in the north of the district it is not unusual for the landlord to take nine-sixteenths of the produce; the latter system is known as *nausātha*. The *batāi* method of division is usually very harassing to all concerned. The ryot is worried by the perpetual supervision of the landlord, and unless the latter can realize the grain in person, he is almost certain to be swindled by his agents. It may, indeed, be said that, with the exception of the *gumāshta* class, nobody benefits by the *batāi* system.

The *bhāoli* system.

The *bhāoli* system, on the other hand, offers less opportunities for vexation or fraud. The value of the crop is appraised on the ground, shortly before the harvest, and a share of that value is paid by the ryot to the landlord, either in cash or in kind, as may be found most convenient. Its successful working depends on the manner in which the appraisement is carried out; but it is surprising with how little friction it is accomplished in the majority of cases. In some parts of the district, where the rice crop is exceedingly liable to inundation, it is probably as suitable a method of arriving at a fair rent as could be devised.

The *mankhap* system.

So much cannot, however, be said for the *mankhap* system, under which the ryot has to pay certain quantity of the outturn, usually from eight to ten maunds a *bigha*, irrespective of the amount of the produce. The rate is about double that of the ordinary cash rental, and though in a good year the ryot who pays *mankhap* may secure a larger share of the produce than the man who pays *batāi* or *bhāoli*, the *mankhap* system is intensely unpopular among the ryots. It deprives them of the benefit of high prices, which is the only compensation they receive for a season of short outturn, and cases have actually been known in which ryots, in a year of famine, had to buy grain at exorbitant rates to make over to their insatiable landlords.

CASH RENTS.

The average rates of rent per acre paid by the several classes of ryots and under-ryots of Darbhangā are as follows:—ryots at fixed rents Re. 1-12; settled and occupancy ryots Rs. 3-12-6; non-occupancy ryots Rs. 4-7-10; and under-ryots Rs. 4-8-4. Ryots at fixed rates occupy a very advantageous position in Darbhangā, and the rents they pay are very low, especially in the north of the district. The highest rates paid by non-occupancy ryots are found in the Samāstipur subdivision, and the lowest in the Phulparās thāna, where their rents are lower than those of occupancy ryots. The rate payable by under-ryots is only 20 per cent. in excess of that payable by occupancy ryots, but it must be remembered that more than half the area held by the former pays a produce rent; and that, like the ryots at fixed rates and the non-occupancy ryots, they are only a small body, holding an inconsiderable area. In the case of settled and occupancy ryots, who hold over 98 per cent. of the ryoti area, the average rent-rate exceeds Rs. 4 per acre in only four thânas, Samâstipur, Dalsingh Sarai, Ruserâ and Khajaulî. In Samâstipur and Dalsingh Sarai, agricultural conditions have long been highly developed; there are many petty resident proprietors, and as the tract is highly productive and practically immune from the effects of drought, high rent rates are only to be expected But neither Ruserâ nor Khajaulî are specially favoured in any respect, and the high rent rates prevalent in them can only be ascribed to the action of their chief landlords. The greater part of Khajaulî, which shows absolutely the highest rent rate in the district, belongs to the Râjnagar Circle of the Darbhangâ Râj, where the ryots are particularly subservient, and have allowed the rent rates to be forced up in a remarkable manner.

In the district, as a whole, the average incidence of rent to the occupied area is Rs. 3-12-4, varying from Rs. 3-10-9 in the head-quarters subdivision to Rs. 3-12-2 in Madhubanî and Rs. 3-15-4 in Samastipur These rent rates are deduced from the rents recorded as payable during the last settlement operations, and not from the rents claimed, and in some cases collected, by the landlords, which were often much higher. But even so, rents in Darbhangâ have not yet become true competition rents, for they do not vary with the pressure on the soil. The highest rent rates are found in the Khajaulî and Ruserâ thânas, where the population is only 766 and 763 to the square mile respectively, the reason being that in this tract big and powerful landlords have been able to make their tenants agree to periodical enhancements. On the other hand, many extremely congested villages in Samâstipur show very low rent rates, either because the ryots have been strong enough to resist enhancements, or because the landlords have not thought it worth while to enforce them. Illegal enhancements have, however, been made with such ease in all parts of the district that there can be no doubt that without a record of rights they would have become more and more common, rents would have tended more and more to become purely competition rents, and the provisions of the law restricting enhancement by contract between landlord and tenant would have become very largely a dead letter.

Enhancement of rents.

The last Settlement Report shows that rent rates have already been doubled within a century; and from the road-cess returns it appears that in the 17 years between 1876 and 1893 the rental which the landlords claimed as payable had increased by over 25 per cent., though there could have been but little extension of cultivation during that period. The rate of increase is more than double that allowed by law in contracts between landlords and tenants; and the enhancement was obtained through the Civil Courts in less than one case in 10,000. Rent rates have, in fact, been subject to constant enhancements, both directly and through the imposition of illegal cesses and *abwábs*. They were often made quite capriciously and without any regard to the capabilities of the soil, and were mostly effected by *sharanámas*, or agreements executed by the leading ryots of the village, admitting that henceforth the rates were to be so much. It may be said that the *sharanáma* system is one of the most objectionable methods of enhancement. Legally, it only binds the people who are parties to the *sharanáma*, and then only if the resultant enhancement does not exceed the limits prescribed by law. But, practically, if the leading ryots of the village can be induced to agree to the *sharanáma*, the others soon fall into line; and as the agreement is only concerned with rates, it leaves the individual ryot in ignorance of his new rent until this is worked out for him by the *patwári* or some other underling.

Many landlords do not even take the trouble to get *sharanámas* executed when they want enhancements. They simply enter the new rent in the *jamábandi*, and exert pressure, both legal and illegal, to compel the ryots to pay it. One fruitful source of such enhancements has been the extreme subdivision of property by partition. The result has been the creation of a large number of petty landlords, who are unable to keep up their position, but who try to do so by squeezing as much as possible out of their tenants, and by arbitrarily enhancing their rents. "There can be no doubt," writes Mr. Kerr in the Darbhanga Settlement Report, "that the provisions of the Tenancy Act, limiting the enhancement of rent by contract, have hitherto been flagrantly disregarded or rather ignored. What the ryots objected to was not that the rents were such as they could not afford to pay, and still less that they were illegal (for they were absolutely ignorant of their legal rights), but that constant changes in the rent roll destroyed all security. In the district, as a whole, the canker which has mainly affected agricultural prosperity, is the constant tampering with rent rolls and consequent uncertainty as to rents. If our operations put a stop to this, they will have conferred no mean benefit on the district."

WAGES.

Statistics of the wages paid for certain selected classes of labour and the rates current during the decade 1893—1902 will be found in the Statistical Appendix; and it will be sufficient to observe that higher wages than those quoted are obtainable in the railway workshops at Samástipur, where labourers get

2½ annas, blacksmiths 7 annas, and carpenters and artizans 8 annas a day. It is interesting to compare these figures with those of 1794, when a common cooly received a wage of 1 anna 2 pies and a carpenter 3 annas per diem. Even 30 years ago a labourer received only 1½ anna a day, while the wages of smiths and carpenters were no higher than 2 to 4 annas, though they sometimes got 5 annas for the day's work. Apparently, however, the rise in the rate of wages in rural areas has not kept pace with the general rise in the price of food-grains, especially for the lower classes of labour. The village labourer earns about the same year after year, but in the towns, where there is a special demand for it, skilled labour commands a higher price than formerly. Among masons, carpenters and blacksmiths the wage shows an upward tendency; the silversmith charges a higher rate for his workmanship; the shoe-maker and the tailor have raised their tariff; and there is a similar tendency among domestic servants. The rise is small and gradual, but is observable all the same; and it appears to be due to a combination of circumstances, such as the advance in the standard of comfort among natives of the better class, the development of roads and railways, and the increasing communication with large centres of industry.

Outside urban areas the wages of labour maintain much the same level from year to year. Fortunately, however, wages in the villages are usually paid wholly or partly in kind; even the village artisan receives grain for the services he renders; and the field-labourer generally gets the whole of his wage in one or other of the inferior grains such as coarse unhusked rice. An able-bodied labourer gets 4 seers of the cheapest kind of grain available, such as *marua*, gram or barley *sattu*. The money value of this works out to just under 2 annas, and the latter sum may be taken as the average. Women and boys get 3 seers only, equivalent to about one and a half annas. The wages of labour depend on the kind of work to be done. Heavy work, such as transplanting and digging, is always done by men, and lighter work, like weeding, is largely done by women. Reaping and threshing are also invariably paid for by a share in the produce, usually one-eighth; for some crops, however, which are easy to reap, like *marua*, the proportion actually paid is a good deal less than this. When the cultivator does not watch his crop himself, he gives the produce of 5 *dhūrs* in the *bigha* to some one to do it for him, and the same amount is paid to the blacksmith and carpenter for keeping his ploughs and *kodālis* in order. The *barāhil* and *gorait*, whose duty is to summon the ryots to the landlord's office for payment of rent or other purposes, are usually remunerated by being allowed to hold a small area of land rent-free. Similarly, the village tradesmen are nearly always paid in grain; and the washerman and barber get the produce of five or six *dhūrs* of land annually for each person for whom their services are required. This system is particularly suited to an agricultural district like Darbhangā, as it has the advantage of being unaffected by any rise in the price of food grains. Whatever the fluctuations in the price of these in the market, the labourer's wage remains the same, and he is thus to a certain extent protected against the distress caused by the high price of food.

PRICES. A statement of the prices current in each subdivision during the years 1893–1902 is given in the Statistical Appendix. They show a great advance on those obtaining even a generation ago, for during the ten years 1861—1870, the average price of common rice (husked) was 20 seers 1 chittack, of wheat 19 seers 4 chittacks, and of barley 33 seers 5 chittacks per rupee. The contrast between prices at the present day and those of a century ago is even greater, as in December 1799 the price of the finest *arwā* rice was 32½ seers per rupee, while *sāthi* rice could be bought at the rate of 1 maund 5 seers per rupee. Even in 1803, a year of scarcity, the cheapest rice sold at over one maund per rupee, and the dearest at 20 seers per rupee; while barley was sold at 2¼ maunds for the rupee. The prices of grain have risen enormously during the last hundred years; but, on the other hand, there has been a very great growth in the income of all classes, and during the last generation the development of communications has had the effect of levelling prices over larger and larger areas. The loss of one or even two crops of the year has therefore a tendency to become less felt, as well as the effect of failures in isolated tracts. Besides this, the vast majority of labour is of an agricultural character, and is paid in kind; and immemorial custom has fixed the amount thereof, so that the high prices of grain affect a large section of the community less than would otherwise be the case.

In Darbhangā the prices of common rice, *maruā* and maize are by far the most important in the effect they have on the material condition of the people. In normal years very little rice is consumed by the poorer classes except what they get while harvesting the crops, and *maruā* and maize constitute the poor man's food. During a famine year, however, the stocks of rice are the last to run out, and in the last famine first maize and then *maruā* almost disappeared from the market. The price of common rice is highest in August, and there is then a sharp fall in prices till December; after this there is a steady rise till August. The price of *maruā* is lowest in September, and it rises to its highest point in July, but there are intermediate falls in the price in December, April, and June, the two former being no doubt due to the fact that the winter rice and *rabi* are then coming into the market. Like *maruā*, maize is cheapest in September and dearest in July, but there are two intermediate cheap periods in February and April.

Famine prices.

In November 1873 Government declared that, whenever in any district the market price of common rice should rise to 10 seers for a rupee, famine rates should be considered prevalent in that district. In 1866 this abnormal rate was not reached in Darbhangā till the month of April; but in 1874, it prevailed from the commencement of the year. By April 1874 it had risen 20 per cent. higher, and thenceforward the quotations for rice were merely nominal, for none owned by private dealers was to be had in the market. The prevalence of higher prices in 1874 than those which prevailed at the corresponding period of 1866 was not restricted to the rice market only; it was also strikingly exemplified in the case of maize, which forms a staple article of food among the labouring classes. In January 1866 maize was selling at 18 seers for the rupee; in January 1874 the quotation was 13·9 seers; in April 1866 the price of this food-grain had risen to 14 seers; while in April 1874, when Government threw open its stores, the market price of maize was 12·9 seers for the rupee, that is, nearly three times the rate prevailing at that period in ordinary years.

In the scarcity of 1888-89 the price of maize never fell below 14 seers 13 chittacks and rarely below 17 seers; and in 1891-92 it never fell below 16½ seers. During the latter scarcity *maruā* only fell to the same price in August 1892, and common rice never sold below 12 seers. Such high prices only lasted a short time during this scarcity; but in the famine of 1896-97 the cheaper grains were practically out of the market in many parts of the district and for long periods, and common rice was the only food stuff available to the poorest labourers. The price of common rice was 9 seers per rupee and even less from December 1896 to August 1897, except for a short time in January; and it fell as low as 7 seers later. The price of maize was 10 seers or below from the middle of December to the middle of August, and for a time it was hardly procurable at all in some bazars from March to July 1897. *Maruā* was sold at 12 seers and below from the middle of August 1896, and from April to August 1897 the price oscillated between 9¼ seers and 12 seers. In the case of all these grains, the highest prices were reached in June and July, common rice being sold at 7 seers, maize at 8½ seers, and *marud* at 9¼ seers per rupee. In 1906 the disastrous floods which swept away the crops, destroyed the roads, and interrupted traffic on the railway, sent up the prices to a higher level even than they reached in the famine of 1896-97. From August to November the price of *marud* and maize varied from 10½ to 12 seers per rupee, while the average price of rice was 6½ seers, rising at one time as high as 5 seers per rupee.

MATERIAL CONDITION OF THE PEOPLE.

Special enquiries regarding the material condition of the people were made during the last settlement operations, and the result was to show that the average family of pure cultivators, who form over three-fifths of the population, should enjoy a moderate degree of comfort and be able to save sufficient in ordinary years to tide them over an occasional season of short crops. With regard to the labourers, the state of affairs is different. This class can only just make ends meet in an ordinary year, and has no reserves to fall back upon when the crops fail. A large part of it must therefore turn to Government for relief, when a serious crop failure produces a diminution of the demand for field labour, which is its chief means of support. The course of events in the famines of 1874 and 1897 shows, however, that the staying powers even of this class have increased considerably; and it is noticeable that a large proportion of the labourers were able to dispense with Government relief during the later famine. The improvement in the condition of the ryots was no less marked. Referring to 1873-74, and to the fact that the famine then was greatest in the district of Tirhut (which is now split up into Darbhangā and Muzaffarpur), Sir A. P. MacDonnell stated that the ryots of that district were so impoverished, so utterly without resource, and so unable to bear up against the failure of a single season's crop, that one-third of the population was at one period in receipt of relief from the Government. In 1896-97, when the distress was at its highest, more than three-fifths of the persons in the Division who were in receipt of relief belonged to the districts of Muzaffarpur and Darbhangā, but, instead of forming one-third of the population of those districts, they now formed less than 3½ per cent. of it. The opinion of the Government of Bengal on this point is contained in the following extract from the Resolution on the Commissioner's Report:—"That under less favourable circumstances than in 1873-74, the numbers requiring Government relief should have been so much less would appear to establish the fact of general improvement in the general circumstances of the people, but the whole conditions of the relief administration during the two famines were so different that the inference is not so conclusive as it would have been had the same methods been adopted in both cases. Nevertheless, the general experience and observations of the officers engaged in the famine, some of them with knowledge of facts, both then and now, as well as the concurrent opinions of non-officials acquainted with these provinces, do indicate that even in Bihār, during the past quarter of a century, there has been a considerable advance in material prosperity, and that the power of the country as a whole to withstand the calamities of seasons has greatly increased."

Indebtedness. The statistics obtained during the last settlement show that only a little over 6 per cent. of the ryoti holdings and only 2½ per cent. of the ryoti area are affected in whole or in part by sales or mortgages with possession. The statistics do not show cases in which the land is mortgaged as security for a loan but possession is retained by the borrower, nor do they disclose amounts borrowed on security other than land. But loans of the first kind are usually only made to persons whose credit is otherwise good, as the fear of a previous mortgage ordinarily deters lenders from advancing money on the security of the land without obtaining possession. As to loans of the second kind, the land is the ryot's chief source of credit, and only petty loans of a floating and temporary nature are made on other security. It is satisfactory, therefore, to find that so small a proportion of the ryots are indebted to such an extent that they have to part with their holdings or proportions of them in order to borrow money, and that the total amount of indebtedness incurred in this way is less than one-sixtieth of the share of the gross annual produce secured by the cultivating classes. The indebtedness of the Darbhangā agricultural community cannot, therefore, be said to be a very serious matter.

Regarding the whole question of the material condition of the people, Mr. Kerr summarises the position as follows: "Over four-fifths of the total population, or 2½ million souls are entirely dependent on agriculture as a means of livelihood. Nearly half a million of these have either no lands at all, and are dependent on the wages of labour for a livelihood, or have holdings which are too small for their maintenance, so that they are compelled to supplement their incomes by working for other cultivators. More than half of this body of cultivating and landless labourers had to turn to Government for relief during the last famine, and their condition must always cause anxiety at times of short crops or high prices. The remainder of the agricultural community (omitting the small body of landlords) consists of the pure cultivators. These persons, numbering about 1¾ millions, enjoy a moderate condition of comfort. The average size of their holdings is over 3½ acres, or more than an acre in excess of the area of the 'subsistence' holding. They can weather two or three successive bad seasons from their own resources without turning to Government for relief. Little more than a twentieth of them are in debt, to the extent that they have had to part with their holdings, or any portion of them, in order to borrow money, and the amount of their indebtedness is an insignificant proportion of the total annual income of the class to which they belong. The district requires for its own consumption less than three quarters of its total annual production of food grains in an ordinary year. The value of the surplus available for export is nearly double the annual rental of the district.

"Though the present condition of the pure cultivators is on the whole favourable, the district could not, under the present conditions of agriculture, support any considerable increase of population without a material reduction of the standard of comfort. Moreover, the dependence of a large part of the district on a single crop would render any further reduction in the average size of holdings a matter of grave apprehension. For the 'subsistence' holding is a holding from the produce of which an agricultural family can just support itself in ordinary years. When the subsistence holding comprises lands which are capable of growing a considerable variety of crops, it is exceedingly unlikely that all of them will fail in the same year. But where, as in a large part of Darbhangâ, the holdings are composed of land only capable of producing winter rice, the failure of that crop must cause universal distress, if the holdings are at, or only slightly above, the subsistence limit. It is the predominance of the winter rice in Darbhangâ which causes that district to suffer so severely from the effects of drought, and though the district might in an ordinary year support a slightly larger population than at present, a reduction in the average size of holdings to the subsistence limit might plunge the whole population into destitution at the next general failure of the rice crop, instead of only one-tenth of the population as at the last failure. But the last census figures indicate that no such rise of population, as would be necessary to produce this effect, is likely to occur, and it may be hoped that the population of the district will remain within such limits, as to enable the larger portion of it to continue, as at present, to enjoy a moderate degree of comfort, taking good years with bad."

CHAPTER VIII.

OCCUPATIONS, MANUFACTURES AND TRADE.

OCCUPATIONS.

DARBHANGA is essentially an agricultural district, the vast majority of the inhabitants being engaged in agricultural pursuits. No less than 78·6 per cent. of the total population derive their livelihood from agriculture; and of these 46 per cent. are actual workers, including 12,000 rent-receivers and 758,000 rent-payers, while the landless labourers aggregate 262,000. Of the persons engaged in occupations other than agriculture, more than a sixth are found in the four municipalities, leaving only a little over half a million in the strictly rural area who are not dependent solely on agriculture; and of this half million nearly 5 per cent. follow agricultural pursuits to a certain extent. Only 10·2 per cent. of the population are supported by industries, 0·4 by commerce, and 1·1 per cent. by the various professions. Of the industrial population 57 per cent. are actual workers, among whom are 17,000 cow-keepers and milk-sellers, 16,000 fishermen and fish-dealers, 13,000 oil-pressers and sellers, 14,000 vegetable and fruit-sellers, 8,000 grocers, 9,000 cotton-weavers, 7,000 potters and 8,000 basket and mat-makers, besides numerous toddy-sellers, tailors, gold and silversmiths, ironsmiths, carpenters and shoe-makers. Of the professional classes 48 per cent. are actual workers, including 5,000 priests, 4,000 religious mendicants and 800 teachers. Among those engaged in other occupations are 13,000 herdsmen, 7,000 beggars and 63,000 general labourers.

MANUFACTURES.

As might be expected in a district containing no important trade centres or large manufacturing towns, the industrial population is very small; and the bulk of the artisans are engaged in supplying the simple needs of a rural people. This economic backwardness is the result of the dependence of the majority of the people on agriculture. They live in villages dotted among their fields, and each village constitutes, to a large extent, a self-sufficing industrial unit. The villagers grow their own food, grind their own corn, and build their own houses. In spite of the introduction of manufactured piece-goods, their thread is still, to a certain extent, spun by the women and woven by the village weaver, while the rough implements needed in agriculture are made and repaired by the village smith and carpenter. Like the adjoining districts, Darbhangā contains a smaller industrial population than is to be found in the South Gangetic districts of the Patna Division. Native handicrafts have not found the same home in North Bihār as in the districts to the south of the Ganges; and it has been suggested that the reason for this is that, after the murder of Alamgīr and the fall of Delhi in 1759, many members of the Muhammadan nobility retired to their *jāgīrs* in Patna, Gayā and Shāhābād, bringing with them large numbers of artificers, while the districts to the north of the Ganges were still in an unsettled state, sparsely populated and only partially cultivated. However that may be, it is certain that in Darbhangā with the exception of the industries that have been developed by European enterprise, manufactures in the proper sense of the word are few in number and of little importance. By far the most important industry is the manufacture of indigo, which is entirely in European hands; and the only other large industries are cloth weaving, which is now in a languishing condition, and the manufacture of sugar, salt and saltpetre, all of which were originally fostered by Europeans. A description of the indigo industry will be found in the next chapter, and a brief account of the other manufactures is given below.

Saltpetre.

In Bihār, which is the chief source of saltpetre in India, the conditions for the natural production of the compound closely approach the theoretical ideal. With a population exceeding 500 per square mile, where agriculture is the chief occupation, and where there is consequently a high proportion of domestic animals, the soils round the villages have an abundant supply of organic nitrogen. The climatic conditions of temperature and humidity are also unusually favourable for the growth of so-called nitrifying bacteria, which convert ammonia by successive stages into nitrous and nitric acid. Wood and cow-dung are largely used for fuel, and the immediate vicinity of each village thus forms a perfect laboratory for the formation of potassium nitrate. In the long period of continuous surface desiccation, which follows a small monsoon rainfall, the compounds so formed in the soil are brought to the surface by capillary action, and appear as a white efflorescence of dried salts, which is collected and purified for export as saltpetre.

Before the discovery of large deposits of sodium nitrate in Chili, India had almost a monopoly of the supply of natural saltpetre, upon which Europe largely depended for the manufacture of gunpowder; and the greater part of this supply came from Bihār. The production of saltpetre was of especial importance during the long wars with France, and the great fluctuations in its price gave rise to heavy speculations during periods of international complications. A system which provided for the control of manufacture and sale of salt by the agency of the Company's servants was accordingly introduced by Clive and Warren Hastings in 1765-80; and the production of saltpetre in Tirhut long continued to be supervised by Europeans. As late as 1847 there were four factories under European supervision in Tirhut; but the fall of prices caused the Europeans who were engaged in the trade to withdraw their capital, and the manufacture is now entirely in the hands of natives. Of late years a series of bad seasons, combined with low prices in Calcutta, has had an injurious effect on the manufacture, and many refineries have been closed. The outturn of saltpetre has accordingly fallen gradually from 64,700 maunds in 1895-96 to 38,000 maunds in 1904-05; though the outturn of salt deduced during the process of manufacture has remained fairly constant, and has risen from 2,760 to 2,910 maunds.

The manufacture is in the hands of a poor and hardy caste called Nuniās, and is founded on a system of advances made to them by middlemen, who again contract with the larger houses of business in Calcutta. It is controlled by the Northern India Salt Department, which grants licenses for refining salt, for making saltpetre and for the manufacture of the unrefined saltpetre called *khāri*. The process of manufacture is simple, and the implements employed are very primitive. Manufacture is carried on in small factories, situated at towns and villages scattered over the country. Nitrous soil is collected from the vicinity of habitations and is lixiviated in earthen filters, after which the nitrous brine is concentrated in small iron or earthen vessels with the aid of artificial heat, and saltpetre is obtained by crystallization as the temperature of the concentrated liquid falls. The saltpetre so obtained is impure in quality, as it contains earthy matter and foreign salts (such as chloride of sodium) in mechanical admixture. This impure saltpetre is collected in refineries situated at different points among the village works, and after being purified in them to a fair degree of refraction, is sent to Calcutta, where some of it is purified to a higher degree of refraction, and some is exported to the United Kingdom, the United States, China and other countries.

Sugar manufacture.

The manufacture of sugar has long been carried on to a considerable extent in Darbhangā, where many of the European indigo concerns were originally started as sugar factories. The manufacture of sugar was, however, given up when indigo proved more profitable, and for the last half century the industry has been almost entirely in native hands. For some years past the manufacture has been practically confined to the Madhubanī subdivision, where it does not appear to have suffered materially from the competition of cheap imported sugar. There were 32 refineries at work in 1895-96 with an outturn of 43,000 maunds valued at Rs. 4,30,000. Since then two refineries have been closed, and in 1904-05 the outturn from the 30 factories still at work was 41,400 maunds, valued at Rs. 2,71,250. The outturn has, therefore, not decreased appreciably of late years, though the fall in prices has led to a great reduction in the value of the product.

Cotton fabrics.

Darbhangā is one of the few districts in Bengal in which cotton weaving is still comparatively an important industry. It is the chief centre in Bihār of the manufacture of the coarse cloth called *khokti*, which is woven in the Madhubanī subdivision. This cloth derives its name from the species of cotton of which it is made, *khoktibanga* cotton (*Gossypium herbaceum*), which is indigenous to the subdivision. The cloth turned out is naturally of a brown colour, resembling tusser silk both in colour and texture; and its value varies from Rs. 5 to Rs. 100 for a piece of 40 yards. It is said that the best quality equals, if it does not surpass, good brown Holland, and that it can well be worn as a summer dress. The cloth is very durable, and is smooth, glossy and of a fine texture. The manufacture is now languishing for want of patronage and owing to the competition of European piece-goods.

Besides *khokti*, a coarse cotton cloth called *motiā* or *gāzi* is woven. This is a coarse cloth, which is chiefly used by the poorer classes in the cold weather. It is warm and durable, and is used for making *dhotis*, jackets, wrappers and quilts for men, and for *sāris* and bodices for women. The cloth is popular among the poorer classes, who cannot afford to purchase woollen fabrics for the winter. There is still some demand for it all over Bihār, and the industry, though not very extensive, is said to be flourishing. Attempts have been made to give a stimulus to the manufacture by the introduction of the fly-shuttle loom, but so far with but little success. Repeated efforts during the last few years to popularize the use of the fly-shuttles among the local weavers have failed to arouse even a passing interest; and all trouble and expenditure in that direction have proved useless. The difficulty as to the high price of the improved fly-shuttle looms has been overcome by adapting the fly-shuttle to the ordinary country looms. The outturn obtained from these modified looms is said to be almost equal to that of the framed fly-shuttle looms, *i.e.*, nearly three times that of the ordinary looms in vogue in the district, while their cost scarcely exceeds that of the country looms. Trained weavers have been sent out with their looms to various busy centres in the interior to teach the local weavers their use; and weaving classes have been opened at Laheriā Sarai, at which both the fly-shuttle loom of the Serampore pattern and the modified loom are worked. The classes are, however, very thinly attended, and but little progress has been made, owing to the conservatism of the weavers.

Other industries.

The other industries carried on in the district are of little importance, and consist mainly of small village industries, such as the manufacture of pottery, mats, baskets, etc. The one indigenous industry which has not suffered from foreign competition is the manufacture of brass; but the workmen are rarely very skilful, and the articles produced are of poor design, with the exception of the utensils manufactured at Jhanjhārpur, a village about 14 miles south-east of Madhubanī, which have a local reputation. A small quantity of blankets are made for local use by the shepherd caste, the Gareris; and some thousands of pairs of shoes are manufactured yearly by the local cobblers, but the exportation of skins and the consequent rise in the price of leather have injured the trade. Lac bangles are made by Laheris and are exported to other districts.

Factories.

There is only one factory in the district, the locomotive workshop under the management of the Bengal and North-Western Railway at Samāstipur, which employs an average of about 1,000 hands on the repair of railway engines, carriages and waggons.

TRADE.

The principal exports are rice, indigo, gram, pulses, linseed, mustard seed, saltpetre, tobacco, hides, *ghi* and timber; and the imports are rice and other food-grains, salt, kerosene oil, gunny bags, coal and coke, European cotton piece-goods and raw cotton. Among exports rice, as a rule, occupies the most prominent position, closely followed by linseed and unmanufactured tobacco. Most of the rice is exported to the United Provinces and the neighbouring districts of Sāran, Muzaffarpur, Monghyr and Bhāgalpur; nearly the whole of the linseed is sent to Calcutta; while the largest importers of the local tobacco are the United Provinces and the other districts of Bihār. The only other articles exported in large quantities are gram and pulse, other food grains and unrefined sugar. Calcutta and Burdwān take the largest proportion of gram and pulse; the food grains are nearly all sent to adjoining districts; and a large proportion of the sugar finds it way to the districts of the Bhāgalpur Division. The most important imports are rice, paddy and other food grains, which come for the most part from Bhāgalpur and Nepāl; coal and coke, which are imported from Mānbhūm, Hazāribāgh and Burdwān; salt, which is brought in from Calcutta; kerosene oil, which is imported from the oil godowns in the 24-Parganas; and European piece-goods from Calcutta.

Most of the trade with the neighbouring districts is rail-borne; but there is a considerable volume of trade between Darbhangā and Nepāl, which is carried on by means of carts and pack-bullocks, and to a certain extent by means of coolies. The imports from Nepāl consist chiefly of grains, such as rice, paddy, gram, pulse and oil-seeds, and of timber floated down the rivers. The most important exports to that State are European and Indian piece-goods, salt and kerosene oil. Darbhangā accounts for 14·8 per cent. of the total trade of the Patna Division, but its commercial life is far from vigorous, and the last quinquennium shows a falling off of 4 per cent. in its trade.

Trade centres.

The principal centres of trade are Darbhangā and the outlying subdivisional head-quarters, Madhubanī and Samastipur. Ruserā, owing to its position on the Gandak, was at one time the largest market in the south of the district, but it has lost much of its former importance since the opening of the railway, though it is still a flourishing bazar. In the north, Narahiā in the Phulparās thāna is an important centre for the Nepalese grain traffic; and there are a number of big bazars in the same thāna, where the Nepalese trade changes hands. The other markets in the district are mainly of local importance; the largest are Pūsa, Kamtaul, Dalsingh Sarai and Jhanjhārpur.

Fairs.

A considerable amount of trade is also carried on at the annual fairs held in various parts of the district, the most important of which are the Kusheswar Asthān, held at Reota, 38 miles south-east of Darbhangā, on the 14th Phāgun (February-March), and the Sivarātri fairs held at Saurāth and at Kapileswar, 4 and 7 miles respectively from Madhubanī. Other large fairs are held at Silānāth and Dubhī, 15 miles from Khajaulī, at Pīpra Ghāt, 30 miles south-east of Darbhangā, at Sultānpur in the jurisdiction of the Mohiuddīnnagar outpost, and at Mahādeonāth in the Phulparās thāna. These are all primarily religious gatherings; but they are attended by large numbers, and a brisk trade is driven at them by traders, who supply the crowds with various articles of commerce. Here, as elsewhere in the district, the chief traders are Agarwāls, Barnawārs, Kasarwānis, Kathbaniās, Khattrīs and Sinduriās.

Weights and measures.

There is no uniform system of weights and measures in the district. Both *kachhā* and *pakkā* seers are recognized; the standard seer of 80 *tolās* is generally used in the towns, but even in Darbhangā town a local seer of 88 *tolās* is also common; while a seer of 50 or 52 *tolās* is used in the villages. For gold, silver and country medicines the following weights are used:—1 *tolā*=12 *māshās* and 1 *māshā*=8 *ratis*. There is a similar diversity of practice with regard to measures of length. Cloth dealers use one yard of 36 inches and another of 40½ inches; and tailors a yard of 41 inches. For measuring lands the pole or *laggi* is usually employed, and this is equivalent to 9 feet 8½ inches. The other measure of length in common use is the *hāth*, which is usually equal to 18 inches.

The measures of capacity generally recognized by the people are the *jhabbā*, *chungā* and *paili*. The *jhabbā* is used for milk and oil, and the *chungā* or *māpa* for wine, oil and other liquids; both are regarded as equal to a seer of 80 *tolās*. Another measure, also used for oil and milk, is called *paili*, if made of bamboo, or *nāpna*, if made of earthenware: this is equal to a seer of 52 *tolās*.

CHAPTER IX.

THE INDIGO INDUSTRY.

PROGRESS OF THE INDUSTRY.

Indigo was a product of North Bihār long before the advent of the British, but its cultivation by European methods appears to have been started by Francois Grand, the first Collector of Tirhut. Writing in 1785 three years after his appointment as Collector, he claims to have been the pioneer of the industry, and says:—"I introduced the manufacturing of indigo after the European manner, encouraged the establishment of indigo works and plantations, and erected three at my own expense." It is at least from this time that the manufacture of indigo began to develop into an industry, and to attract European enterprise; and by the end of the 18th century the present concerns of Dalsingh Saria, Jitwārpur, Tiwāra and Kamtaul had been founded. In 1788 there were 5 Europeans in possession of indigo works in Tirhut; in 1793 the number of factories had increased to nine; and by 1803 altogether 25 factories had been established. During these early days, the industry was directly fostered by the East India Company, and special permission had to be obtained by Europeans wishing to engage in it. In 1802, however, the Board of Directors passed orders that no further advances or other pecuniary encouragement should be given to the planters, as the large profits obtained from the sale of the product made such aid unnecessary. Indigo accordingly became an independent and self-supporting industry, the pioneer planting industry in Bengal.

Its progress during the next few years was rapid, though there appear to have been many failures, probably owing to over-production. In a report submitted in 1810 the Collector of Tirhut stated that, taking one year with another, the district seldom sent less than 10,000 maunds of indigo to Calcutta for export to Europe, that 30,000 to 50,000 souls received their principal support from the factories, and that on the average each factory disbursed from Rs. 25,000 to Rs. 30,000 per annum in hard cash to the labourers and cultivators for some miles round. He estimated that in this way not less than six or seven lakhs of rupees were circulated every year by the planters in Tirhut, and urged that the advantages of the industry to the labouring classes were so great that Government should encourage it in every possible way. "Let the speculator win or lose," he wrote, "acquire a princely fortune or die a pauper, the district is equally benefited by his industry, and his struggles for prosperity do rarely succeed. Some of the planters succeed, but the majority of them fail." Difficulties appear to have arisen later through the competition of rival concerns, and in 1828 the Collector represented that indigo cultivation had extended so greatly that some restriction on it was desirable for the benefit of the district. "From the misunderstanding," he wrote, "which has prevailed and still prevails amongst the European planters, disputes with one another are of very frequent occurrence: disputes have, however, of late occurred through descendants of Europeans embarking in indigo cultivation, chiefly, if not entirely, by native agency. For the peace of the district and welfare of the established planters, it therefore appears highly desirable that the Government restrictions regarding the erection of factories by Europeans should be extended to the descendants of Europeans, and power be vested in the Magistrate to prevent engagements for the cultivation of indigo plant by other than the proprietor or proprietors of one established factory."

In 1850 there were no less than 86 factories in Tirhut, several of which were used for the manufacture of sugar, but about this time sugar was finally superseded by indigo as the European industry of the district, and many refineries were converted into indigo concerns. By 1874 there were altogether 126 factories and outworks engaged in the production of indigo, and the area under cultivation was nearly 100,000 acres. At this time, Darbhangā contained the largest concern in India, Pandaul, which with its outworks comprised an area of 300 square miles; it was subsequently split up, the northern outworks being purchased by the Mahārājā of Darbhangā, who abandoned the cultivation of indigo in them a few years ago. Difficulties were now threatened by the feeling of tension between the ryots and the factories produced by certain abuses which had crept into the system of cultivation. A report submitted to Government by the Commissioner of Patna in 1877 showed that the system prevailing involved an amount of lawlessness and oppression, principally in the shape of extorted agreements to cultivate and of seizure of ploughs and cattle, which could not be tolerated. On receipt of this report, some of the leading planters as well as the officials of Bihār were consulted through the Commissioner.

It was an object to do nothing which would unduly excite the mind of the ryots, and to avoid any such agitation as might lead to breaches of contract and general embitterment of relations between planters and ryots; and as some of the leading planters declared themselves sensible of the necessity of reform and willing to assist in the work, and for this purpose undertook the establishment of a Planters' Association, any action on the part of Government was postponed, and the matter was entrusted to their hands. This body showed a sincere desire to place the relations between planters and ryots on a more satisfactory footing, and drew up a series of rules, embodying very important reforms, for the guidance of its members. Owing to the efforts of the Association, there has been no recurrence of the old complaints, and very cordial relations have existed up to the present between the planters and the cultivators.

Until the discovery of the Badische artificial dye the area under cultivation appears to have been steadily on the increase, and by the end of the 19th century indigo had spread into every thâna of the district, though it was always more prevalent in the north, where the soil has never been altogether suitable for the crop. The industry is now suffering from the competition of the artificial dye in Europe, and from the high prices of food-grains and the consequent demand for land in Bihâr. The price of the natural dye has consequently fallen, and many factories have had to abandon or contract very greatly the growth of indigo. At the time of the last settlement 52,136 acres or 3 per cent. of the cultivated area were under indigo, while there were 28 head factories, with 36 outworks in the district. In 1904 their number had fallen to 24 with 27 outworks, and the area under cultivation had also diminished considerably; it was estimated at 34,000 acres in 1903-04, while the final forecast of the indigo crop in Bengal returned the area sown in 1906 as 28,400 acres. Government has come to the aid of the planters with substantial grants for scientific research, the aim of which is to ascertain whether it is possible to increase the outturn and quality of the dye at a cheaper cost; excellent work in the chemistry, bacteriology and agriculture of indigo has been done and is still progressing; and every effort is being made to improve the quality of the plant by importing fresh seed from Natal. But so far these experiments have not succeeded in arresting the decay of the industry. The price obtained for indigo is barely sufficient to cover the cost of production, and many factories are either closing altogether or are reducing the area cultivated with indigo, growing in its place sugar, cotton and other country crops. Most of the area now under indigo is in the Samâstipur subdivision; the plant is grown to a smaller extent in the headquarters subdivision; and the industry is no longer of any practical importance in Madhubani, as all the factories in the north and east have ceased to grow the crop.

The gradual decline of the industry in recent years will be sufficiently apparent from the following statistics showing the outturn, value and price of the indigo manufactured:—

YEAR.	Outturn in maunds.	Value in Rs.	Price per maund in Rs.
1895-1900 (average) ...	11,599	21,34,895	184
1900-01	9,540	12,87,900	135
1904-05	1,673	2,50,950	150

CULTIVATION. The land on which indigo is to be grown is prepared for sowing as soon as the *kharif* crops have been reaped, as it is of great importance that the soil should retain the moisture supplied by the rainfall in October and November. The land is ploughed and reploughed until the clods are all pulverized, and after being manured, it is levelled and smoothed with a plank roller composed of a long heavy beam on which two men stand. The seed is sown at the beginning of the hot weather, as soon as the nights begin to get warm, a special drill, with coulters about 5 or 6 inches apart, being used for the purpose; and after sowing, the roller is again used to level the surface. The seedlings are very delicate until their roots are well developed, and many perish owing to dry west winds; but moist east winds after sowing, and spring showers later, are very beneficial to the young plants. They make slow progress until the monsoon sets in, when the growth becomes very rapid; and they are ready for cutting, which takes place immediately before they flower, in July or August. A second crop is obtainable in September, but usually yields less than the first crop, the outturn of which is ordinarily 80 to 120 maunds of green plant per acre. The yield of 100 maunds of good ordinary plant should be about 10 seers of indigo.

Soils and manures. Indigo may follow indigo, but is more generally rotated with such crops as sugarcane, tobacco, poppy, cereals and oil-seeds, as it is an exhausting crop, which cannot well be grown on the same land for more than three successive seasons; on the other hand, being a deep-root crop it forms an excellent rotation crop for those which have surface roots, as is the case with many food-grains. It is usually grown on high lands beyond the reach of floods, the soils are varied in character and composition, but deep alluvium loams seem to suit the crop best. Many soils of this description are deficient in phosphoric acid and nitrogen, but are generally rich in other useful constituents; while extensive experiments have proved that superphosphate and nitrate of potash can be economically applied. The refuse indigo plant (*sith*) is the manure most easily obtained, and is very valuable; but it is less suited for indigo itself than for rotation crops, such as sugarcane, tobacco, poppy, cereals and oil-seeds. It produces heavy crops of indigo, but the leaf is deficient in colouring matter; and indigo grown on land heavily treated with *sith* is liable to injury from insect pests. Farm manure, chemical manures, such as saltpetre and lime, bone-dust and oil-cake are also used.

Seed.

The seed used in Tirhut comes for the most part from the United Provinces, as there is a general belief among the planters that the best seed is obtainable there and that local seed does not keep good from season to season and does not germinate properly. The system of getting seed in this way, without any special selection, has however caused deterioration in the varieties commonly grown, and there is little doubt that the plant commonly cultivated does not now produce a satisfactory amount of dye matter, particularly on worn-out indigo lands. The chief cultivated form is not *Indigofera tinctoria*, as was formerly supposed, but *Indigofera sumatrana*, which was introduced about 150 years ago.

Within recent years Natal indigo (*Indigofera arrecta*) has been introduced, the seed being obtained direct from Natal and also from plants acclimatized in Java. This plant has been found to give a very considerable increase of colouring matter from the unit area of land, and will produce excellent cuttings for two years in succession and mediocre plants for a third year, whereas other varieties have to be resown annually. It has a much more vigorous habit of growth than the old variety, and the leaf contains a larger proportion of the colour-yielding principle. It appears to be eminently suited to the soils and climate of Bihār, and farms have now been established in three districts for the cultivation of its seed in an extensive scale.

Colouring matter.

The colouring matter from which indigotin is derived exists almost entirely in the leaf of the plant. It increases as the plant grows, but deteriorates after a certain stage, and harvesting and steeping have therefore to be carried on expeditiously. Plants which have been cut some time and become blackened by heating in bulk contain very little dye matter, so that the green plant cannot be carted very far. A plant which is forced by manure to very active growth also gives a poor percentage of dye matter.

MANUFACTURE.

Steeping.

After they have been cut the leaves are taken to the factory and are there steeped in large vats until fermentation is complete. The old system of treating the plant requires two sets of vats, one on a lower level than the other, those on the highest level being used for steeping the plant, which is kept submerged by logs of wood or bars fixed in position. During this process active fermentation takes place through the action of soluble ferments (enzymes), and causes the formation of a compound which is easily convertible into indigotin by the action of air. The period of steeping varies with the temperature of the air and water; if the temperature of the water is 90° to 92° F., steeping for 10 hours is sufficient, but instead of varying the time, it is preferable to heat the water in the reservoir to a definite temperature. It has been shown by experiment that when the plant is steeped in water at 150° to 160° F., the colouring principle is extracted in half an hour; and indigo made in this way is superior in quality and contains about 75 per cent. of indigotin.

Oxidation or beating process.

When fermentation is complete, the liquid in the steeping vats, which varies in colour from bright orange to olive green, is drained off into the lower vats, and is there subjected to a brisk beating, the effect of which is to cause oxidation and separate the particles of dye. As the oxidation proceeds, dark blue particles of indigotin appear in the liquid, the colour of which consequently changes, and the beating is continued until a little of the liquid placed in a saucer readily throws a dark blue precipitate, itself remaining of a clear amber colour. If there is any delay in oxidation, there is a considerable loss of colouring matter, and the indigo produced is inferior. Oxidation was at one time accomplished by hand-beating, but in most Bihār factories it is now done by a beating wheel worked by power from a central engine.

Lime and ammonia process.

The improved method of treating the plant known as Coventry's lime and acid process, which is used in a few Bihār factories, requires a vat intermediate between the steeping and beating vat. Lime is added to the indigo liquor, and a precipitate of calcium and magnesium carbonates then forms, which also carries down various other impurities. The cleared liquor, when run off into a lower vat and oxidized, yields indigo of good quality, and a substantial increase of colouring matter is obtained. An ammonia gas process patented by Mr. Rawson in 1901 also produces a direct increase of colouring matter.

Boiling and final preparation.

Finally, the sediment (*mál*) which remains in the vat is boiled, strained and made up into cakes for the market. The first process in these final stages of manufacture is to boil the precipitate which settles after oxidation; the indigo produced from it is improved, if sulphuric acid is added. The dye matter is next placed on a cloth strainer until it becomes fairly dry. It is then carried to the press and subjected to gradually increasing pressure until it has taken the form of firm slabs, which are cut into cakes and slowly dried on racks. Good indigo should contain 60 per cent. or more of indigotin, should be bright and of a dark blue colour, with a coppery gloss, and should break with an evenly coloured fracture.

LANDED INTERESTS.

The chief feature of the industry in this district as compared with the other indigo-growing tracts in North Bihār is the large area cultivated direct by the factories themselves: it was, in fact, ascertained in the course of the last settlement operations that the factories in the Samāstipur subdivision had in their direct cultivation no less than 94 per cent. of the total area under indigo. The area held by them as landlords is far smaller than elsewhere in North Bihār, amounting to only 6 per cent. of the total area of the district. The fact that the Darbhangā factories grow the greater part of the crop themselves, instead of merely purchasing it from others, has been of great advantage to them in the present depressed state of the industry, when the falling price of the natural dye has made the ryots unwilling to grow a crop which does not pay them so well as ordinary crops.

The total area held by them as proprietors or permanent tenure-holders is even smaller, being under 1 per cent. of the total area; and the greater part of their interests as landlords are derived from temporary tenures. The reason for this is that a factory has seldom an opportunity of buying an estate with lands situated conveniently for its purpose. The sale of estates is regarded as a social disgrace only to be resorted to in the last extremity, and consequently proprietors will not part with their rights unless absolutely forced to do so; while the practice of granting permanent leases has almost entirely died out with the rise in the value of land. Factories are, therefore, mainly dependent on temporary leases for acquiring interests in villages in which they wish to extend or maintain the cultivation of indigo. Such leases are granted as security for loans or are simple farming leases (*thikā*). The latter are due to the financial embarrassment of proprietors and to their desire to avoid the troubles of management. The term of the lease may vary from 5 to 20 years, and its renewal is generally made an opportunity for increasing the rent.

The *thikā* leases are the commonest of all; and it is to the *thikā* system and to his influence as a considerate landlord that the planter owes the strength of his position. The other class of leases common in the district consists of usufructuary mortgages, under which the factory grants a loan at a moderate rate of interest and receives the land of an embarrassed proprietor as security. Leases of this kind are either *zarpeshgī* or *sadua-patua*. In the former case the interest on the loan is paid yearly by deducting it from the rent payable to the mortgagor, and the principal is repayable on the expiry of the lease; in the latter both principal and interest are liquidated by deduction from the yearly rent due to the proprietor, and the tenure thus returns to the latter free of encumbrance at the end of the term agreed upon. The *zarpeshgī* leases are most in favour with the factories, as the proprietor is frequently unable to repay the principal on the expiry of the lease, and the factory consequently acquires a quasi-permanent interest in the land.

Under-tenures.

In some cases, factories take a lease of an under-tenure, this lease being known as *katkanā*, *e.g.*, if two factories quarrel about their respective jurisdictions, a sub-lease from one to the other generally forms the basis of a compromise. Again, a proprietor is prepared to grant a lease of his estate to a factory on condition that it takes the whole, but part may fall within the jurisdiction of another factory. In such a case, the good services of the Indigo Planters' Association are called in to arrange for the latter factory taking a sub-lease from the former, and thus the danger of friction is avoided.

The *tinkathiā* system.

A factory, taking a lease of an estate, acquires direct possession over all the lands which were formerly cultivated by the proprietor, and also over any lands which may become vacant during the period of the lease, by abandonment or surrender on the part of their original occupants. In addition to this, it was formerly the universal custom for the ryots to surrender to the factory for indigo cultivation a certain proportion of the lands of their holdings, usually three *kathās* in the *bigha*, the ryots receiving an abatement of rent for the area so given up, and a promise that it would be returned to them on the cessation of the factory's connection with the village. This system of acquiring lands was always intensely unpopular with the ryots, and is not now generally practised by the best factories. As indigo cultivation usually entails the breaking down of field boundaries and the amalgamation of many small plots into one large one, it was generally practically impossible for any factory, even with the best will in the world, to trace out and restore to the ryot his original plot, on the expiry of a long-term lease; and consequently the system was a fruitful source of dispute and discontent.

It is satisfactory, therefore, that it is being abandoned, and that most of the land, which is found in the possession of a factory in its capacity as a temporary tenure-holder, is that which it has acquired unobjectionably as the representative of the superior proprietor.

Ryoti interests.

The very considerable area held by the factories on ryoti interests is mainly acquired by the purchase of ryoti rights, either privately or through the Civil Court. The law facilitates the acquisition of occupancy rights by tenure-holders in an area like Samâstipur, where petty proprietors predominate and great subdivision of proprietary rights prevails. A person who does not hold the whole of the proprietary interests of an estate or *patti* in farm, is not debarred from acquiring occupancy rights in the lands of the estate during the term of his lease; and consequently a factory, holding only a share of an estate in lease, as is very common, is frequently able, on the expiry of the lease, to retain in its own possession lands in which it has managed to acquire an occupancy right during the continuance of the lease, by means of direct cultivation and payment of rent to the non-leasing proprietors. This method of acquiring occupancy rights is of considerable importance in Darbhangâ, for the factories in Samâstipur have occupancy rights in nearly a quarter of the land in their own cultivation.

***Kurtauli* leases.**

The land held by the factories as under-ryots is mainly acquired by what are known as *kurtauli* leases, which correspond to the *sadua-patua* leases granted by proprietors to tenure-holders. The factory gives the ryot an advance of so many years rental of the land taken up, and in return is allowed to cultivate the land for that period, giving it back to the ryot on its expiry. The only risk run by the factory is that the ryot may go off with the advance, without paying the rent to the superior landlord, who may then sell up the holding and refuse to recognize the factory in any way. But in practice this is not a serious danger, for *kurtauli* leases are generally executed for part holdings only, and the ryot remains in the village to cultivate the portion which he has not sublet to the factory. An analogous form of mortgage sub-lease is the *sud-barna*, in which, as in a *zarpeshgi* tenure, the factory gives an advance, on which the interest only is liquidated by deduction from the annual rent for the land sub-let, the factory retaining possession until the principal is repaid. But, here again, want of security other than the land, which is worthless if the ryot should abscond, prevents the system from being very common.

SYSTEMS OF CULTIVATION.

The three main systems of indigo cultivation commonly practised are *zirâat* or direct cultivation by means of hired servants, *âsâmiwâr* or cultivation through factory tenants, and *khushki* or cultivation through outside ryots.

Zirâat. The term *zirâat* includes all land in the direct occupation of the factory, whether held by it as proprietor, tenure-holder, ryot or under-ryot. In Darbhangâ by far the greater part of the area under indigo is cultivated direct, and it is estimated that the amount of indigo not grown direct by the factories cannot exceed 10 per cent. of the total.

Asâmiwâr. When the system of *âsâmiwâr* cultivation is followed, the indigo is grown by the factory tenants at fixed rates per *bigha*. Generally documents, called *sattas*, are executed, the ryot usually receiving an advance and binding himself to grow indigo on a certain specified portion of his holding, and to pay damages if he should fail to carry out his agreement. All the expenses of cultivation are paid by the ryot, but the seed is given by the factory, which also cuts and carts away the indigo, the ryot being paid for the indigo at a rate fixed by the Indigo Planters' Association.

Khushki. Agreements executed by ryots who are not the tenants of the factory are called *khushki sattas* or voluntary agreements. In this case, the factory merely supplies the seed and pays for the crop when delivered; it sometimes also gives an advance to the cultivator at a light rate of interest. The amount of *khushki* cultivation in Darbhangâ is very small, as indigo, if it is to pay, requires selected lands, carefully cultivated and rotated in an intelligent manner. These conditions are all wanting in the *khushki* system; the rate of remuneration has to be high in order to induce the outside ryot to grow indigo; and the factory cannot therefore afford this system of cultivation.

INFLUENCE OF THE INDUSTRY. Regarding the general effect of the industry on the district, the following opinion of the Settlement Officer may be quoted:—"The ordinary cultivator in Darbhangâ is little affected by indigo cultivation, except in so far as he may have an indigo factory for his landlord; and as this usually implies protection from enhancement of rent, it is a pure gain to him, provided the factory does not force him to grow indigo against his will, or to give up his lands for the cultivation of indigo. The small area in which indigo is grown, otherwise than by the factories direct, renders the first danger inconsiderable, and the second has been minimized since the practical abandonment of the *tinkathiâ* system. Hence it may be said that the cultivators of the district derive nothing but advantage from having indigo factories as their landlords; and how great the advantage of stability of rents is, can only be appreciated by those who have seen and realized the constant and vexatious enhancements which, prior to our operations, were always going on in the estates of ordinary native landlords.

"The indigo industry may, without any qualification whatever, be pronounced a boon to the proprietors and labourers of the district. The manner in which embarrassed proprietors turn to indigo factories for loans has already been described. Even for proprietors who are not financially embarrassed, it is no small benefit to be able to rid themselves of the trouble of management, by handing over their property to a tenure-holder, who will pay a full rent punctually and manage the estate efficiently. The benefit of the industry to the labourers is clear. It has been calculated that on the average 172 labourers are required for one day per annum per acre for the cultivation and manufacture of indigo. This means an expenditure on wages alone of at least Rs. 20 an acre, so that the annual total wages bill for the 50,000 acres under indigo* must exceed ten lakhs of rupees. The cultivation of none of the ordinary food crops gives employment to so large a labour force as this, and the benefit of the indigo industry to the labourers of this district is enhanced by the fact that a good deal of the work has to be done in the hot weather when little other employment is available.

"It may be said, therefore, that the indigo industry is an unquestionable benefit to all classes in the district, with a possible reservation as regards the ryots who grow the crop on the *satta* system, and whose profits are not so large as they would derive from the cultivation of other crops. They are, however, compensated in other ways, and, in any case, their number in Darbhanga is so small as to render them of little importance in estimating the effect of the industry on the district as a whole, and in this connection the valuable services rendered on many occasions by members of the planting community to the general administration should not be forgotten."

To this it may be added that the planters have consistently shown themselves true friends to the cultivators and labourers in periods of adversity. Their readiness to help the latter was very clearly shown in the last famine of 1896-97, and the value of their services at this time of distress may be gathered from the remarks of the Commissioner, who wrote:—"The planting community, as in 1873-74, proved to be of inestimable value in the crisis. In the former year many of them were stimulated by the prospects of pecuniary advantage: in 1896-97 no such stimulus was offered; but at an early stage of the operations their services were offered gratuitously—an offer which they more than redeemed. Numbers of them sacrificed time, ease and health to assist Government, and many of them have been losers by their public-spirited efforts. Yet the work has been cheerfully done, and the community have once more proved themselves invaluable to the administration."

---

* The area under cultivation has since decreased to 28,400 acres.

PRINCIPAL FACTORIES.

The following are the principal indigo factories in the district:—

FACTORY.	Outworks.	Factory.	Outworks.
HEAD-QUARTERS SUBDIVISION.		SAMASTIPUR SUBDIVISION.	
Ahar.		Banhār.	
Buchauli.		Chal Mehsi.	
Baghauni.		Gangauli ...	Alampur.
Benīpur ...	Harsinghpur.	Harsinghpur	Balampur. Bhawāra. Rahīmābād.
Daulatpur ...	Meghaul. Rāmnagar.		
Hathauri ...	Rasulpur.	Ilmāsnagar ...	Masena.
Hāthi.		Jitwārpur ...	Dāūdpur. Hasauli.
Mangalgarh	Kursauli. Motīpur.	Keota ...	Chatrā. Gobindpur. Kamlā. Pembarhanda. Shāhpur. Tappa.
MADHUBANI SUBDIVISION.			
Jaynagar ...	Nararh.		
Pandaul ...	Lahrā. Lohat.	Khān Mirzāpur.	
Rayām.		Maniārpur ...	Budaya. Kalyānpur.
		Muktapur ...	Kalyānpur.
		Rewari.	
		Shāhpur ...	Undi. Barauli.* Sakri.* Subnaha.*

---

* Outworks of the Dhūli factory in the Muzaffarpur district.

CHAPTER X.

MEANS OF COMMUNICATION.

ROADS.

IN the early days of British administration North Bihār was far better provided with roads than the South Gangetic districts, owing to the European enterprise which was attracted to this part of the country. With an industry so valuable as the manufacture of indigo, it was only natural that attention should be given to the maintenance and improvement of means of communication; and the following extract from a report submitted by the Collector of Tirhut in 1824 shows that such roads as the interior of the district possessed were almost entirely due to the efforts of the planters. "The roads," he wrote, "are not under my control, but under that of the Magistrate, who usually repairs them with his prisoners as far as they can conveniently be sent. The zamindars do little or nothing in that way. The roads in the immediate vicinity of the different indigo factories are usually in good order, but they are kept so solely at the expense of the proprietors of the factories. The roads or bye-ways in the interior of the district are very bad and barely possible for hackeries. There are a number of streams and *jheels* in the district, wherefore bullocks are not much used: hackeries are, however, used near the indigo factories, and occasionally towards the northward, but the wear and tear of the same is great in consequence of the usually bad state of the roads. Owing to the number of streams, much of the produce of the district is conveyed by water. Where the roads are good, it is either owing to their being repaired by the Magistrate or by the planters." Little however appears to have been done to extend and increase the number of these roads, until a District Committee was established in 1870 for the administration of the funds which were set apart for the construction, maintenance and repair of roads, bridges, etc. During the famine of 1874 relief labour was largely employed in constructing new roads and repairing the existing ones; but in spite of this activity, the total length of roads made over to the Road Cess Committee of Darbhangā, on its formation in 1875, was only 648 miles.

Since that date the construction of additional roads and the maintenance of old ones have received close attention; and in

1905-06 the length of metalled roads had increased to 52 miles, and of unmetalled roads to 1,953 miles, besides 766 miles of village roads. In other words, the length of roads is now more than thrice what it was 30 years ago, and there is more than half a mile of road to every square mile of superficial area, in spite of the fact that the resources of the District Board have been severely strained at times by the enormous damage caused by the floods which occasionally sweep down upon the district. Much has been done during the quinquennium ending in 1904-05 in the repair, raising and metalling of old roads, in the making of new roads, and in the construction of bridges. During this period the aggregate expenditure on original works has been 4½ lakhs or 61 per cent. more than in the preceding 5 years, and that on repairs 3⅜ lakhs. Special attention has also been paid to the extension of roads as feeders to the railway, and the length of the district roads has been increased by 46 miles.

Roads radiate from Darbhangā town and the subdivisional head-quarters to the most important places in the interior, and from Darbhangā town and the Sakri, Jhanjhārpur and Nirmāli railway stations to the Nepāl frontier. The most important of these roads is the main road running eastwards from Muzaffarpur through Darbhangā town and Narahiā to Purnea. The central and south-eastern portion of the district is still, however, in want of good communications, and many of the roads are impassable during the rains. The tract is a low-lying one, subject to frequent floods, and high embankments are a necessity. These are expensive to maintain in repair, and are often breached in time of flood. To avoid this, an enormous amount of bridging would be necessary. Much, however, has been done in this direction in recent years; five pontoon bridges have been constructed at different points on the Gandak and the Bāghmati; and the road from Darbhangā to Jaynagar on the frontier, which crosses all the rivers in the west of the Madhubanī subdivision, has been bridged throughout at the cost of the Darbhangā Rāj. In Samāstipur, where the country is high, and comparatively little embanking or bridging is required, most of the roads are in good order and can be used at all seasons of the year.

Roadside arboriculture.

There are few, if any, old roads on which portions of avenues of trees do not exist; but for some years previous to 1900 nothing was spent on tree-planting. It was represented that the trees damaged the roads, absorbing the moisture in the dry weather and preventing the roads from drying up during the rainy season. It was admitted, however, that this argument could not apply to the metalled roads, and roadside arboriculture has been resumed, the efforts of the District Board being directed mainly to maintaining avenues where they exist and to planting new trees along these roads. Since 1900 a 12 years programme has been in force, under which the Board devotes at least Rs. 1,000 a year on the average to this object. The great difficulty in the way of the scheme has been the supervision of the work at any distance from head-quarters; and the Board has therefore encouraged private enterprise as much as possible. The conditions observed are that the trees, when planted, become the property of the Board as long as they exist; and when they fall or are cut down, the timber vests in the man who planted them. It is claimed that the good results obtained have justified this system, the trees receiving more attention in their infancy, and the finances of the District Board being relieved.

Carts.

The two kinds of carts most commonly used for transporting goods are the *chaghās* and the *saggar*. Both are two-wheeled carts drawn by bullocks, but the former is a large cart with long bamboo poles projecting in front from either side, and the latter is a lighter and rougher kind of cart, usually employed for carrying country produce. The conveyances most generally used by passengers are the *ekkā*, *manjholi* and *champani*. The *ekkā* is a two-wheeled light trap, drawn by a single pony, which can be used over the most uneven ground; the body consists of a frame-work, covered with cloth, across which *newār* tape is woven. The *manjholi* and *champani* are both drawn by 2 bullocks. The former is similar in construction to an *ekkā*, but the yoke consists of a beam of wood at right angles to another long beam projecting from the body of the cart. The *champani* is a two-wheeled and sometimes four-wheeled light carriage similar in construction to an omnibus. It has however no benches, and the travellers squat or lie down as they please. It has a pole with a cross-bar, which rests on the backs of the bullocks which drag it.

Railways.

The district is, on the whole, well provided with railway communications. Its south-west corner is traversed for 29 miles by the main line of the Bengal and North-Western Railway, which enters the district just below Dalsingh Sarai and runs through Samāstipur to Waini; and it also contains 25 miles of the chord line from Hājīpur to Bachwāra, which runs parallel to the Ganges embankment from east to west. From Samāstipur a line runs to Darbhangā and there branches off in two directions, the first north-west to Sītāmarhi through Kamtaul and Jogiāra, and the other due east to Khanwā Ghāt on the Kosi. The total length of these lines within the district is 146 miles; and another line running from Sakri to Jaynagar on the Nepāl frontier has recently been opened. This line, the earthwork of which was mostly completed as a relief work in the famine of 1897, has opened up a tract which was previously remote from the railway; it passes the important town of Madhubanī and taps a large grain supply from Nepāl. The construction of a direct line from Darbhangā to Muzaffarpur with a branch line to Sītāmarhi has also been sanctioned.

The District Board of Darbhangā have proposed the construction of a light railway from Samāstipur to Ruserā, and the District Board of Monghyr desire to have a similar railway from Ruserā to Khagariā. As, however, the Bengal and North-Western Railway Company has proposed a line from Darbhangā to Khagariā, which will serve much of the country to be traversed by the above two lines, and as it yet remains to be seen what further railway connections the proposal will involve, both the light railway projects are held in abeyance for the present. The Railway Board has now (1906) sanctioned the survey of the line from Darbhangā to Khagariā and also of a line from Darbhangā to Ruserā and Khagariā, both surveys being made by the agency of the Bengal and North-Western Railway.

WATER COMMUNICATIONS.

The Ganges is navigable for steamers throughout the year, and a daily service which plies up the river from Goalundo calls at Hardāspur in the extreme south-west corner of the Samāstipur subdivision. The Little Gandak river is navigable for boats of 1,000 maunds burden at all seasons, but its boat traffic has much decreased since the opening of the railway. Boats of 400 or 500 maunds can pass up the Bāghmati, except in a very dry season. The other rivers in the district are navigable in the rainy season only, but are not much used even then owing to their liability to floods. The principal ferries are those on the Little Gandak and Bāghmati rivers, the most important being at Māgardihi Ghāt (at Samāstipur) and Singiā Ghāt (at Ruserā) on the Little Gandak, and at Kalyā Ghāt and Hayā Ghāt on the Bāghmati. A steam ferry also plies between Bāzidpur and Bārh in the Patna district on the main line of the East Indian Railway.

POSTAL COMMUNICATIONS.

There are altogether 414 miles of postal communication and 62 post offices in the district, there being thus one post office for every 54 square miles. The number of postal articles delivered in 1905-06 was 2,243,000; the value of money orders issued was Rs. 14,57,000, and of those paid Rs. 19,14,000; and the total amount of Savings Bank deposits was Rs 1,61,000. There are also 13 telegraph offices, from which 17,500 messages were issued in the year; these offices are situated at Dalsingh Sarai, Darbhangā, Kamtaul, Laheriā Sarai, Madhubanī, Narahiā, Narhan, Pandaul, Pūsa, Rājnagar, Ruserā, Samāstipur and Tājpur.